IN_SITU

- AN INVESTIGATION OF FUNCTIONS AND FUTURE STRATEGIES FOR LEPROSY COLONY

JOHANNA BRATEL & STINA HELLQVIST

Alnarp 2011

Karthik wakes up next to his mother on the floor; feeling her breath against his cheek, regularly and soothing. He stretches out his morning tired body, and through the thin fabric sheet he feels the cool floor. He moved down to sleep on the mud floor from the loft bed seven years ago; the day his father died. It was an accident at work he was told, a falling rock on a construction site. The scent of the Antyesti incense, the white cerements and the rhythmic sound of the funeral hymns filling the slum streets are still explicitly vivid in his memory to this very morning. That day Karthik grew ten years in just a few seconds, and so did his mother. But startlingly enough, his father looks just as his former old living self as he looks down on him from the framed photograph on the wall. At that time, the home had seemed so big, but over the years it appears to have shrunk, his scrawny teenage body not possibly able to lie in full length anymore. He makes an attempt to stretch it, his feet on the cook top next to the TV, his toes in the spice rack that is also used as storage for various things, his head on the bench which is also his brothers bed, and dining table at lunch. His fingers are sprawling out to the little altar where he keeps his school books. He looks up at his sister who sleeps in the loft above his head to make sure that everything is as it should. She is surrounded by all the family possessions hanging down in bags from the roof like beehives.

Slowly he rises up, squinting at the clock. Through the window sunlight gently seeps in. He slips out through the door without waking anyone, and sits down outside the hut. He enjoys the early morning hours before the loud and bustling mechanism of the slum starts moving. He likes to sit and watch as Akansha combs her giggling daughter's hair, and how Rishikesh is getting ready for work. Of course there are more events going on in the evenings, when clothes are washed with water splashed all over, the sweet dosa is being cooked with fierily smoke fizzling the air, cricket is played, incense sticks produced with speed, children playing, adults discussing, laughing. But the mornings are still and sleepy and beautiful in all its simplicity.

It will be yet another humid, hot day in the pre-monsoon period. In a couple of weeks the sky will open up and the streets and homes will be filled with water to the brim. He looks towards Himani's blue facade, up against Prakash's green, and Kumar's bright pink door. He knows every detail of them by heart, just as he knows every single person in Leprosy Colony. For 19 years the slum has been his home and his world, and he loves it just as much as he loves the idea of leaving. He will soon finish school, and then he wants something else, something different and exciting. He's got the plan sorted out in his head; the move to London to that multi-national company that he's seen on TV many times, where he will earn money for his mother and live a grand life. Now he hears how she moves in there, rattling the kettle for tea, and he raise up to help her as another day in Leprosy Colony begins.

ABBREVIATIONS AND ACRONYMS

BBMP	Greater Bangalore Municipal Body
BDA	Bangalore Development Authority
BLP	Bombay Leprosy Project
BMP	Bangalore Municipal Body
BMRDA	Bangalore Metropolitan Regional Development Authority
CASUMM	Collaborative for the Advancement of the Study of Urbanism through Mixed Media
ILO	International Labour Organization
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
KSCB	Karnataka Slum Clearance Board
KUIDFC	Karnataka Urban Infrastructure Development and Finance Corporation
MDGs	United Nation's Millennium Development Goals
MFS	Minor Field Study
NGO	Non-Governmental Organization
NSDF	National Slum Dweller's Federation
RS	Indian Rupees
SAP	Structural Adjustment Programme
SCC	Swedish Cooperative Centre (Kooperation Utan Gränser)
SHBH	Save Home Build Home
Sida	Swedish International Development Cooperation Agency
SPARC	Society for the Promotion of Area Resource Centres
UN	United Nations
USD	U.S. Dollar
YUVA	Youth for Unity and Voluntary Action

ACKNOWLEDGEMENTS

ABSTRACT

The world is urbanizing and many cities in developing countries are unable to accommodate the masses of new city residents. Slums are an immediate response to this process, and in India over 50% of the urban population lives in slums. Different ideas and methods of slum reduction have been present in India during the 20th century, which started off with a focus on slum *clearance*. As pure slum clearance eventually turned out to be unsuccessful in practise as slum dwellers remained unable to integrate in the formal housing market, but simply rebuilt their huts illegally, clearance in combination with *resettling* on a new location instead became the prevailing idea. This method is still in practice in India, and pre-fabricated residential buildings (often in form of multi-storey slab blocks) are built by the government all over the country. Through the work of many NGO's, new ways of handling urban slums are however coming. *Slum upgrading* where the existing structures are upgraded in-situ in collaboration with the slum community is an increasingly used method, although still in very small scale. SPARC, a major actor on the Indian NGO scene, has for example tried to use these methods in a slum upgrading project in Pune where only selected houses of poor quality were demolished and rebuilt, and the rest was upgraded. The problem is that these alternative ideas of slum rehabilitation are still rare, and the dominating methods of pre-fabricated, multi-storey projects are generally unsuccessful. On the wide-ranging level, one could say that they are unsustainable; socially (because they alter the slum dwellers' social networks), economically (because they are not adapted to slum dwellers' economic situation and income-generating strategies) and environmentally (because they don't take existing structures and materials in consideration).

In Bangalore in Karnataka, southern India, the number of slum dweller is lower than the national average, but still high enough to involve around two million people. Bangalore is a segregated city with remains of separation from colonial times. Gated communities and secure shopping malls arise next to small slum pockets. As the "high-tech" capital of India, it is rapidly expanding, and a new metro line is under construction. 1,200 of Bangalore's slum dwellers live in Leprosy Colony, an old leprosy slum close to the central railway station. The settlement is old and overcrowded and lacks sanitary facilities and clean water. However, the slum also displays some fine qualities in terms of variation, flexibility, human scale, street life and social capital, as well as 40% stable, permanent buildings which could be upgraded rather than demolished.

The aim of the thesis is to gain a greater understanding of the use, functions and potential improvements of slum settlements, with the focus on Leprosy Colony. It intends to look at slum rehabilitation issues from a planner's perspective, of public space and of the role and layout of a 'non-planned' settlement. The project have been carried out through a differentiated methodological approach of *literature analysis; observation; documentation; interviews* and *proposal work*, where the literature analysis and proposal work were performed mainly in Sweden, and observation, documentation and interviews were carried out mainly in India. The proposal work resulted in a slum upgrading proposal for Leprosy Colony, *IN_SITU,* built up by six conceptual strategies;

Improved connectivity; rail and road bridging structures; reinforced network of public realm; a flexible anti-flood system; incremental housing; framework for neighborhood expansion.

These form a proposal of a flexible character, which takes its departure in the existing conditions and possibilities of the slum.

01 INTRODUCTION

PREFACE

This project is a master thesis in Landscape Architecture from the Faculty of Landscape Planning, Horticulture and Agricultural Sciences of the Swedish University of Agricultural Sciences (SLU) in Alnarp. It was carried out throughout the spring and summer of 2011 as a collaboration between the authors Johanna Bratel and Stina Hellqvist. The study was completed within the framework of the *Minor Field Studies* Scholarship Programme (MFS) which is funded by the Swedish International Development Cooperation Agency (Sida). The Minor Field Study scholarship offers students in Swedish universities an opportunity to conduct a shorter field study in a developing country. One main purpose of the scholarship is to enhance Swedish students' understanding and interest in problems and opportunities related to developing countries. India, often described as the world's largest democracy and a country currently in the process of large economical and social changes, is obviously of great interest within this framework.

The urban transformations that are taking place in India at the moment with massive urbanization and a haphazard urban planning, made the country a perfect case study for a master thesis in landscape architecture. Within the framework of the landscape architecture program, comprehensive urban planning is a central component, and we find the international issues of planning in developing countries extremely important in order to understand our roles as landscape architects and urban planners. Planning in a developing country without functioning planning institutions is a different matter than in the west, and an interesting challenge of pushing yourself to think in new ways and look for solutions less conventional.

All study visits, meetings, interviews, design work and written parts have been worked on by the authors together, and the thesis can therefore be considered a joint project. Working as a pair on a major project like this has been a valuable experience and we have both gained greatly from the collaboration; both on a personal level and professionally/academically. The field work in India would have been a much tougher challenge on our own, as it would have forced us to pay a greater attention to safety issues and abstain from some experiences not safe for an alone woman. As a pair we were able to travel without supervision and experience things more freely.

The thesis has been carried out in a loose collaboration with SPARC (Society for Promotion of Area Resource Centres), one of India's largest NGOs working on housing and infrastructure issues for the urban poor. SPARC was contacted in the late autumn of 2010, and functioned as our initial link to India. When we arrived in Bangalore in April 2011, SPARC introduced us to the slum settlement of *Leprosy Colony*, which they had plans to rehabilitate, and which came to be our case area and focal point throughout our project. Although SPARC facilitated the link to Leprosy Colony, this thesis has been developed independently from SPARC. During the fieldwork in Bangalore, Gaurav Roy Choudhury from the architect firm *Designether* acted as our main advisors as he initially was involved in the slum rehabilitation project of Leprosy Colony.

PROBLEM BACKGROUND

For the first time in history more people live in cities than in the countryside (Davis, 2006). In the rapidly urbanizing developing countries of the world, many cities have failed to accommodate the bolting number of new city citizens, and expanding slum areas and growing urban poverty is the immediate response to this process (Davis, 2006). In India's cities, this problem is particularly evident. Mumbai, India's second largest city is estimated to inhabit over 9 million slum dwellers – more than 50 % of its population (Columbia University, 2009). Bangalore is India's fifth largest city with a population of 7.2 million people (UN, 2007), and one of India's fastest growing urban agglomerations (Sudhirta, 2007). The city has, compared to Mumbai and other Indian cities, a fairly low number of slum dwellers, but still a slum population of two million people (Davis, 2006). 1,200 of these slum dwellers live in Leprosy Colony. The settlement was formed in the 1960s as a colony for lepers in the outskirts of the city, but has become an increasingly central part of the city as the urban core has expanded outwards. Today only one percent of the people living in Leprosy Colony bear the disease (or deformations from previous illness) but the stigma of leprosy lingers on and has contributed to a strong physical and psychological isolation. Leprosy Colony is connected to a larger slum settlement, *JWC Nagar*, which sprawl along the north side of one of Bangalore's major railways.

In 2009, SPARC became involved in a governmentally financed slum rehabilitation scheme of Leprosy Colony. SPARC's undertaking was to mobilize and analyze the community, start up micro saving schemes among the dwellers, and develop a proposal for how to rehabilitate the area. Due to various factors the project lingered on for some time without much progress, and in the winter of 2011 the two of us came into the process to explore how we, as Swedish landscape architect students, could contribute to the process of slum rehabilitation in Leprosy

Colony.

The slum settlement of Leprosy Colony is overcrowded and lacks some sanitary facilities. Unemployment is fairly high (both within the formal and informal sector) and there is also a vast mixture of housing standards; of stable, permanent houses and impermanent huts. Leprosy Colony and its surrounding slum are physically segregated from the city by railways, walls and large roads. All these problems together make the settlement in great need of upgrading. The challenge and problem thus lies in how to develop a plan for a sustainable rehabilitation of Leprosy Colony. Sustainability is all about long-lasting solutions; plans that can create economically, ecologically and socially well-functioning neighbourhoods that can stand the test of time and adapt and adjust as time, people and conditions are changing. Although the major focus is on Leprosy Colony in the local scale, this project should be seen as a contribution to the international discourse on the subject of slum rehabilitation and urban development, and could therefore be interesting also outside Bangalore's and India's borders. Questions of how to create sustainable ways of living are always of immediate interest all over the world, and although the Swedish conditions are very different from the situation in India, we would as an addition want to reflect on the possible application of our findings to the Swedish context.

IN_SITU is Latin and translates "in place" (dictionary.com, 2011). Longman Dictionary of Contemporary English concludes;

"If something remains in situ, it remains in its usual place" (Longman, 2011).

Our proposal for Leprosy Colony is based on that very statement;

instead of altering existing structures or moving slum dwellers to new locations, a site-specific proposal for a flexible and adaptive process in many steps is presented, for change *IN_SITU*.

Besides fulfilling the academic requirements of our university, the target groups for this master thesis are practitioners and students of landscape architecture and urban planning, together with other professionals in the field of urban studies and within NGOs. But we also see that it could be of great interest for politicians in India and other developing countries where similar issues are present.

AIM

The aim of the thesis is to gain a greater understanding of the use, functions and potential improvements of a slum settlement such as Leprosy Colony, Bangalore. To be able to fulfil this aim, four key questions have formed the basis of our investigations;

- Which factors are relevant to understand and negotiate for sustainable slum rehabilitation?

- How is slum rehabilitation performed in India today?

- In what urban context is the slum settlement of Leprosy Colony situated?

- What kind of proposal is possible to develop for a sustainable slum rehabilitation of Leprosy Colony?

DISPOSITION

The thesis covers three main parts:

1 The first part (CHAPTERS 1-4) provides a background to the situation of urbanization and informal settlements in a worldwide perspective, and present theory, discussions and examples relating to slum rehabilitation; worldwide as well as in India. The first part also presents SPARC and the role of NGOs in India. This part offers the theoretical and analytical basis to evaluate the possibilities of a sustainable slum rehabilitation plan for the slum settlement of Leprosy Colony.

2 The second part (CHAPTERS 5-7) examines the city of Bangalore and presents the slum settlement of Leprosy Colony. It describes the segregated urban fabric in which Leprosy Colony is a component, and looks at theory and examples related to enclave cities, which is of great importance to have in mind when proposing a rehabilitation plan for Leprosy Colony. Leprosy Colony is in this part examined and analyzed, and a discussion about future problems and possibilities in presented.

3 The last part (CHAPTERS 8-10) draws up a proposal for how to sustainable rehabilitate Leprosy Colony, and presents a final discussion about the thesis in general.

Even though part one could be described as the theory part, part two as the emperical part and part three as the proposal part, there are no clear lines between these. Theory and empery is intertwined throughout the thesis to keep the focus on India,

and still relate to relevant theory throughout. There are three main discussion chapters, one in each of the three parts. The first (CHAPTER 4 - Discussion: *Why does slum rehabilitation in India fail?*) refer to general issues connected to slum rehabilitation in India. The second (CHAPTER 7 - Discussion: *Problems and potentials*) discusses problems and potentials of the future Leprosy Colony. The last discussion in the end of the thesis (CHAPTER 9 - *Final Discussion*) reflect on the entire thesis, our own process and tie the dealt with issues back to Sweden.

METHODOLOGY

When we travelled to India for our eight-week field trip, we were not entirely sure what the focus of this thesis would be, and how our time in India would turn out. We knew we were interested in slum rehabilitation issues from a planner's perspective; of public space and of the functions and layout of a 'non-planned' settlement. We also knew that we would study one specific slum area in Bangalore; Leprosy Colony. We had done comprehensive literature studies of slum relating issues, as well as empirical studies of Bangalore and India to be able to quickly understand the situation and perform our initial analyzes. We had set up a clear programme for our early slum settlement analyzes (see OBSERVATION and DOCUMENTATION below) that would form the basis for our work and shape our research focus. As our field investigations progressed, our interests for the small slum section of Leprosy Colony soon widened to include the entire slum area (JWC Nagar), and eventually also the surrounding neighbourhoods as well as the whole city fabric in which Leprosy Colony is situated. We saw how the development of the city had shaped the slum, and how a possible approach to a sustainable slum rehabilitation process was to re-integrate the slum in the city.

The way of course for the thesis was thus not a traditional hypothesis-research-result approach, but rather a curious, groping journey that formed the research problem along the way. Leprosy Colony was a great start of our investigations. The minor size of the slum enabled detailed analytical work within our tight timeframe, which would have been difficult in a larger slum settlement. It made it possible to really observe the life and functions of the slum, talk to its residents, and understand the problems they were facing in their every-day life. However, it also

made us understand that no slum is a world of its own, and that slum dwellers depend on the rest of the city, just like the rest of the city depend on the labour force from slums. Every slum is also unique with its own problems, resources and possibilities, and although general strategies can be presented for slum rehabilitation, every case is exclusive.

To categorize our method, we have divided the work in five different approaches; *literature analysis, observation, documentation, interviews and proposal work*.

LITERATURE ANALYSIS

Literature studies have provided the theoretical framework for analyzes and research in Bangalore, which have included theories about urbanization, informality and slums in general, as well as specific facts about India and Bangalore. We have also looked into different ideas of how to carry out slum rehabilitation projects, in India as well as internationally, and our readings have incorporated publications about the work of NGOs in India as well.

In order to obtain a wide and all-embracing view of the issues addressed, we have chosen to read as much as possible, from as many different sources as possible. The readings have thus been of quite different characters; from purely academic papers such as Kileki Mrema's doctoral dissertation *Public Spaces as Everyday Architecture* from the University of Copenhagen on a slum settlement in Dar el Salaam, to popular "blockbuster" bestsellers like Mike Davis' *Planet of Slums*, to newspaper articles, publications from organizations, politically laden papers from both left-wing perspectives as well as from conservative standpoints, and official documents from the Indian Government. The width of literature has given us a good foundation for making up our own ideas of slum rehabilitation and urban planning in India.

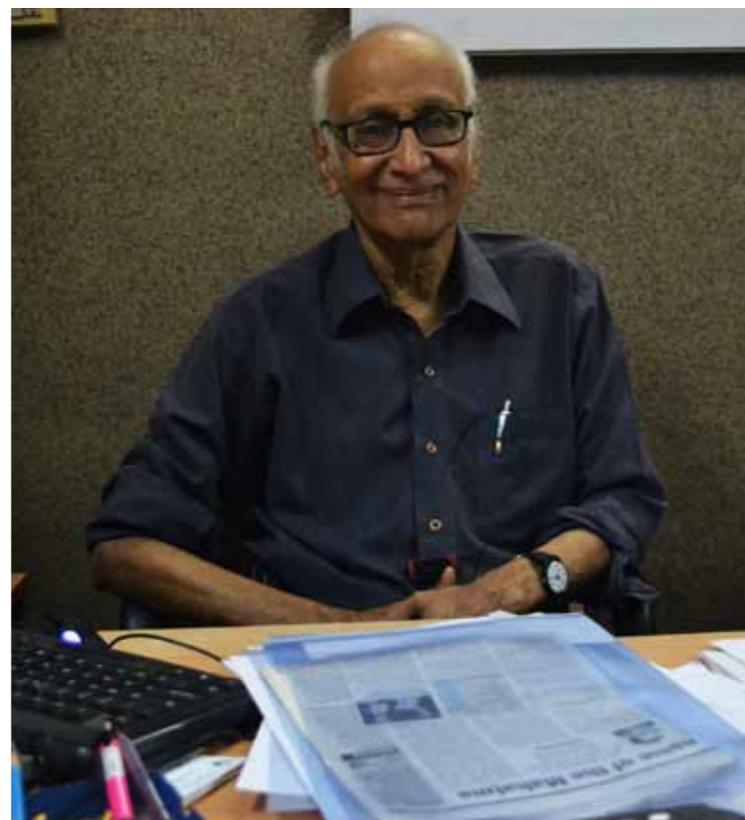Literature studies have been present all the way throughout the work of the thesis, but with an emphasis on the initial three months.

OBSERVATIONS

The basis of our observations in India has been constituted by Georges Perec's documentation of the urban environment in

The field work in India included site analyzes, interviews and discussions with organizations, slum residents, and various experts.

Species of Spaces and other Pieces (1997). Perec's experiments and suggestions on how to document life and observe it with more awareness have been a great source of inspiration. With the help of the book's method of breaking up the urban surroundings into smaller pieces, the observations were performed.

Perec starts his observations by observing the smallest unit; the paper in front of him. From the paper he moves on to the table, the kitchen, the home etc. (Perec, 1997). In a similar manner, we tried to start in the smallest unit of Leprosy Colony; the actual home of the slum dwellers. We visited a few homes several times at different hours of the day, and looked at how people performed their daily activities and how they used their space. Eventually we moved on to look at their immediate surroundings; the spill-out spaces and out-door 'living room'. From the immediate surroundings we expanded our analyzes to the whole slum street. We chose one street in the community and observed activities taking place there throughout the day. Following our analysis on the street in detail, we expanded our observations to involve the whole network of streets in the settlement. On the community level we also examined the relationships between private and public, formal and informal, and of flows and movement patterns. The last step of this zoom out analysis of Leprosy Colony was the city. How does Leprosy Colony fit into the evolving organism of metropolitan Bangalore? How are the lives of the Leprosy Colony dwellers affected by surrounding areas? What physical and mental barriers surround the slum? What is the patchwork of Bangalore made up by? How does the city connect/disconnect its different parts?

DOCUMENTATION

Documentation on site was done in various ways, although sketches, quick notes, and photographs formed the base of all documentation. As the slum settlement was not previously mapped, some time were spent on measuring, sketching and mapping approximate locations and sizes of houses, paths and public spaces. Google Earth aerial photographs were used as a base, and by adding our own measurements we were able to draw up an approximate plan in AutoCAD of Leprosy Colony and surrounding areas. AutoCAD drawings of Bangalore were unfortunately not available either, and all mapping therefore had to be done in approximate manners through Google Earth. The analyzed diagrams and final proposal maps should therefore be seen as approximate, and a result of our own time-limited

13

estimations and investigations, rather than exactly data.

As a part of our documentation process, we have also, throughout the entire project, continuously been contributing to Massachusetts Institute of Technology's (MIT) *CoLab Radio Thesis Chronicles* (http://colabradio.mit.edu/). CoLab Radio is an online platform for students writing their thesis within the field of urban planning, to share knowledge and establish connections. Throughout our project, we have posted 6 online posts which have made our research available to a wider range of people. Through the blog channel, we have got in touch with people we probably would never have met otherwise. One example is Dr Ganapati, a retired Indian physician in Mumbai who spent his life trying to eradicate leprosy from Mumbai's slums through his NGO *Bombay Leprosy Project* (BLP). We spent an excellent afternoon visiting his clinic and studying at his non-profit work for poor slum dwellers in Dharavi.

INTERVIEWS

Several interviews with key persons have been conducted throughout the project. Just like our choice of literature, we have tried to speak to a wide range of people with different opinions on slum rehabilitation and urban planning. One day in Mumbai we were for example discussing the multi-million dollar proposal for the slum settlement of Dharavi with the famous Indian architect Mukesh Metha at an exclusive member's club in the morning, and had a cup of chai in a corner hangout with the slum activist Sinpreeth Singh in the afternoon. Naturally their ideas of slum rehabilitation were fundamentally different, and gave us two completely different sides of the coin.

We also interviewed slum dwellers in Leprosy Colony to get an idea of their thoughts about their neighbourhood, and of their everyday lives, habits, backgrounds, hopes and future plans.

For all interviews, an unstructured interview method was used.

The method allows the respondent to provide information outside the frame of specific questions. Basic questions are prepared but can be changed or adapted to meet the respondent's understandings or beliefs, and interviews might even change course slightly if unexpected and interesting information come about. Unlike structured or semi-structured interviews, they do not offer a limited, pre-set range of answers for a respondent to choose from, but instead advocate listening to how each individual person responds to the question. Since all interviewees are asked different questions, this questioning style lack the precision of a structured interview, and could in some cases be considered less reliable (Online Business Dictionary, 2011). However, since the main objective of our interviews were to receive the different opinions and experiences on slum related issues from a wide range of people, a structured interview method would have been too delimiting for the cause. The information we received from the different interviewees helped us build a nuanced understanding of problems and possibilities around slum rehabilitation.

The different faces of slums; five different slums within one single city - Bangalore. From the left EWS Eijipura; Mari-yappanapalya; Austin Town temporary settlement; Kengeri; Leprosy Colony

Since all the interviewees spoke English we didn't need to use an interpreter. We conducted all the interviews together, one of us being mainly responsible for asking questions and the other person by taking notes. Notes were summarized directly after the interview to get information as accurate as possible.

PROPOSAL WORK

The work on our proposal started the last weeks in Bangalore, and continued in Sweden for a couple of months, along with continuous work on the written parts. The analyzes performed in Bangalore formed the basis for our proposal, and through sketching sessions and discussions between the two of us we developed our proposal.

BASIC CONCEPTS AND TERMINOLOGY

SLUM

The term *slum* brings up a lot of images for most people. Everyone has individual associations to the term, and for many people in the developed world, this picture is rather defined by broadcasting news channels and movie productions such as *Slumdog Millionaire*, than personal experience. There's no uniform concept for what a slum settlement may comprise, and Mumbai's *Dharavi*, Palestine's Gaza strip, Rio de Janeiro's many favelas and Dar es Salaam's *Msasani Makingira* are consequently all very different. Informal housing, insecure tenure, congestion and lacking water or sanitation facilities are however recurrent strains. UN-HABITAT defines a slum household as a household lacking one or more of the following amenities; durable housing; improved water; sanitation facilities; sufficient living area and

secure tenure (UN-HABITAT, 2008).

Britannica online encyclopedia has a similar, but more compressed, definition of a slum. However, they also add social disorganization as a factor:

"Densely populated area of substandard housing, usually in a city, characterized by unsanitary conditions and social disorganization" (Britannica, 2011).

In India, the term "slum" was once used as a slightly disparaging term to describe settlements that the government planned to clear (Burra, 2005). Ever since the 1980s, international debates about whether it really is a suitable word to use because of its negative connotations, have been going strong (SCC, 2005). However, the term is still in frequent use by large worldwide organizations as well as smaller NGOs. Many slum-dwellers even call their home slum. An example is the *National Slum Dwellers Federation* (NSDF), a grass-root organization of nearly a million

slum dwellers in India.

Apart from "slum", many different terms are used for describing slum areas, such as *shantytown, favela, squatter settlement, informal settlement, unplanned settlement, illegal settlement* etc., all with slightly different connotations. The World Bank is, just like UN-HABITAT, using the word *slum* in their official documents to describe informal, unplanned settlements, and so does American author and political activist Davies in his apocalyptical book *Planet of Slums* (2006). Ananya Roy, professor at the Department of City and Regional Planning, University of California, Berkeley, is turning against the use of *informal settlements* for poor slum areas in her article *Why India Cannot Plan Its Cities: Informality, Insurgence and the Idiom of Urbanization* (2009). She argues informality is not synonymous with poverty. What is happening in the uncontrolled sprawling periphery of many metropolitan regions around the world is as much a sprawling of wealth as a sprawling of poverty. Privatized, informal subdivisions are no more legal than the slums, but can express a "cleaner facade" with functioning infrastructural systems, and thus appear significantly different than the landscape of slums. Accordingly, she argues that the term "informal settlement" is very vague and hard to define, and doesn't necessarily refer to a poor neighbourhood with lacking sanitary amenities (Roy, 2009).

Thomas Wimark, on the other hand, is using the term *informal settlement* in his thesis from Stockholm University about slum rehabilitation and gentrification in Dar es Salaam. He is arguing that the expression highlights the legal status of the housing, while *slum* on the other hand refers to more qualitative concerns (Wimark, 2007). In architect Kileki Mrema's doctoral thesis *Public Spaces as Everyday Architecture*, he is also using the term *informal settlement* for an area in Dar es Salaam. He defines it as follows:

"Informal settlements are unplanned or irregularly built human settlements which are a result of unofficial occupation of (often urban) land and the buildings do not normally conform to building regulations." (Mrema, 2008 p.XVII)

Mrema's definition involves the physical structure and legal form of the settlement, but doesn't say anything about the potential lack of sanitary facilities or services in the settlement.

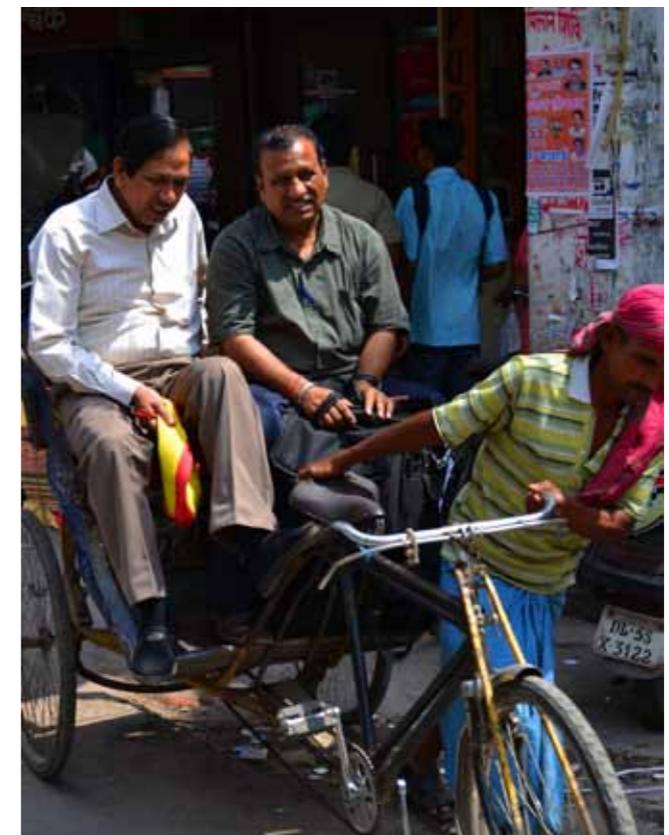In this thesis we have chosen to use the term *slum* to describe

unplanned, informal settlements. Since a lot of official terminology concerning slums involve the term (like *slum rehabilitation* and *slum upgrading*) we found that clearer. Our cooperative partners in this project, SPARC, are also using the term which made that decision make even more sense. When using the term slum we are however not incorporating the negative prejudices that some people connect to the expression. By choosing to use the term we are adopting UN-HABITAT's previously mentioned definition for slum households.

INFORMALITY

The increasing urbanization, mass globalization and the growing number of poor in developing countries has given rise to an uncontrollable growth in many major cities. This has resulted in informality, manifested as illegal invasion of land, disconnected from many social and physical infrastructures within the city (Tranberg et al. 2004). In the book *Urban Future 21: A Global Agenda for 21st Century Cities* by the World Commission, published by Peter Hall and Ulrich Pfeiffer, the phenomenon is described as "informal hyper-growth- cities", meaning explosively growing cities. Hernando De Soto, a Peruvian neo-liberal economist known for his theories on the informal sector and his promotion of property titles describes, in turn, the same phenomenon as "heroic entrepreneurship"; citizens creative response to the governments inability to meet their most basic needs (Roy, 2005). This goes well in line with how informality is often described, as something outside the official or planned, or as urban unstructured activities. It is frequently defined as a new urban landscape within the city, but segregated from the formal. However, defining informality is a difficult task; it varies from place to place, from time to time and is largely dependent on what is formal. Spanish psychologist Manuel Castells and Cuban-American psychologist Alejandro Portes stress this by saying that informality is not a product but an ongoing process of shifting relationships to the formal (Castells et. al, 1989). Planning Professor Ananya Roy draws similar conclusions when comparing the two images of informality by Peter Hall and Ulrich Pfeiffer and De Soto. She argues they may seem widely different from each other, but they have one striking similarity; both consider informality separated from formality. While Hall and Pfeiffer consider that the urban poor have built their own city completely independent of the formal city planning apparatus, De Soto believes the informal city is *excluded* from the formal city in a legal apartheid where the poor are denied access to the formal

system of capitalist transactions. However, according to Roy, informality should instead be considered a *mode of urbanization*. Without the standardized division of formal and informal, Roy suggests that informality is not as a separate sector, but rather *"a series of transactions that connect different economies and space to one another"* (Roy, 2005 p. 148). We agree with this statement of Roy, and when we talk about informality in this thesis we consider it a *mode* rather than a *sector*.

Importantly, as stated by Roy earlier, informality should not be seen merely as a venue for the poor. More affluent citizens, like the middle class and even the elite of both second and third world cities, carry out illegal land occupations. Upscale informal subdivisions emerge next to squatter settlements in as much violation of the land use regulations as its poor neighbours. Both are informal, but embodying very different concretizations of legitimacy. Roy claims that *"the divide here is not between formality and informality but rather a differentiation within informality. This in turn means that informality must be*

understood not as the object of state regulation but rather as produced by the state itself" (Roy, 2005 p. 149).

The state has the power to decide what is informal and what is not, and what forms of informality will thrive and which will not be there. According to Roy, this goes against De Soto's assertion that the state would be the creator of legal apartheid, but instead informality should be seen not only as a bureaucratic or technical problem, but rather a complex political struggle (Roy, 2005).
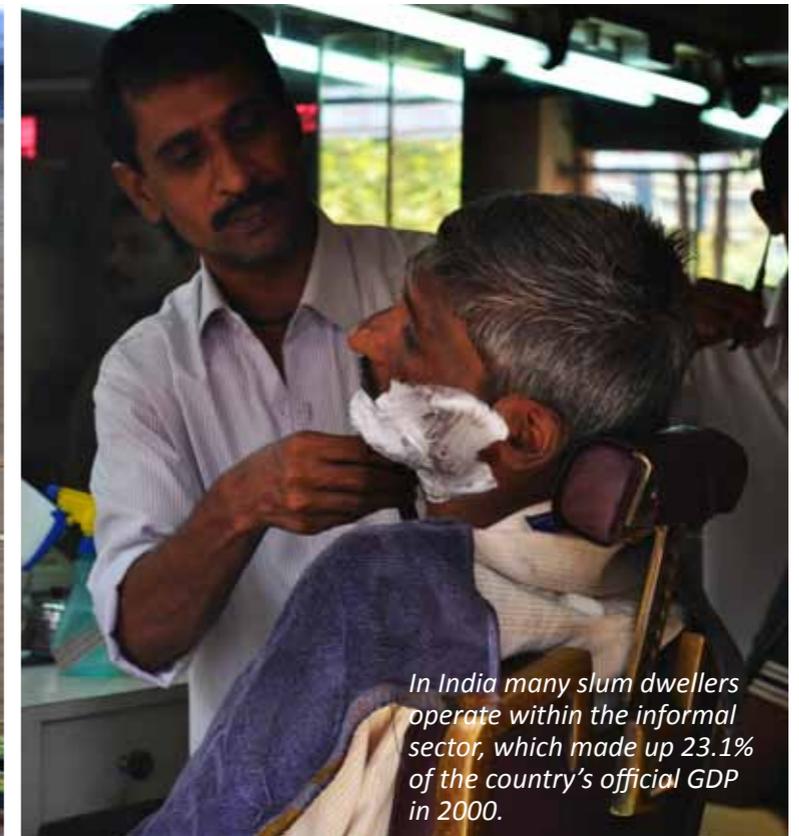
THE INFORMAL ECONOMY

Linked to informality, and also closely linked to slums, is the informal economy. In developing countries, employments and occupations outside the formal employment sector is a widespread and growing phenomenon. People involved in the informal economy are not necessarily poor, but poor people are generally in greater risk of ending up in this category than the wealthier portion of the population (Sida, 2004). The

phenomenon of this parallel sector has been discussed under various names throughout literature and research. Apart from *informal*, terms like *unofficial, irregular, second, underground, subterranean, hidden, invisible, unrecorded, black* and *shadow economy* have been used, and definitions of the phenomenon are varying slightly due to its purpose (Frey et al., 2000). Sida summarizes the general characteristics of the informal economy as the *"unregulated non-formal portion of the market economy that produces goods and services for sale or for other forms of remuneration"* (Sida, 2004 p.11). UN instead defines the activities in the informal sector as those that have *"legal ends but employ illicit means"* (Suresh, unpublished, p.1). The World Bank is on the other hand portraying the activities in the informal economy as *deliberately* concealed from public authorities in their report *Shadow Economies All Over the World* from 2010 (Buehn et al., 2010)

It is thus difficult to clearly define the sector. The red thread in most descriptions of the informal economy is that it contains

work that is performed unrecognized, unrecorded, unprotected or unregulated by public authorities. Irrespective of the legal status of the activities, the informal economy is often a genuine life saver to the exposed urban poor. Nevertheless, the lack of insight from public authorities has its clear problems; child labour, inadequate labour legalization, limited access to worker's organizations, low and irregular incomes, poor labour protection and social security schemes are some of the downturns (Sida, 2004). There's obviously also a large economical problem connected to the informal economy, since enterprises in the informal economy doesn't contribute to the national economy through taxes. If a fraction of today's informal enterprises could be formalized, it would probably contribute substantially to increased economic growth (Sida, 2004).

In the 1950s, the informal sector of small producers and traders was considered a minor problem and dismissed as something temporary and passing. The formal economy with its growing industries was predicted to eventually swallow this minor

In India many slum dwellers operate within the informal sector, which made up 23.1% of the country's official GDP in 2000.

17

informality so that the phenomenon would disappear. In 1972, a survey by the International Labour Organization (ILO) however showed that activities unrecognized by public authorities hadn't decreased at all, but instead grown considerably (Sida, 2004). Today a majority of jobs in the urban workforce can be categorized in the informal sector (Sida, 2004), and around the world, fully 85% of all new employment opportunities are estimated to occur outside the control of authorities and governments (UN-HABITAT, 2008). In India, the informal sector has been estimated to make up 23.1% of the official GDP in 2000 which was about average in Asia (Schneider, 2002), compared to Switzerland with one of the smallest informal economies of 8.8% (Schneider, 2002). However, because of the very nature of the sector, it is incredibly difficult to measure the informal economies in various countries, and the statistic might deserve to be considered with a pinch of salt.

There are various reasons why the informal sector has grown so intensively the last decades. The inability by the formal sector to absorb a growing population is one main factor. Urbanization has resulted in a massively growing urban workforce that hasn't been able to find formal jobs, and have accordingly started small businesses beside the formal market. Excessive costs, government regulations and corruption have also played an important role, as well as many public institutions' weak ability to provide adequate education, training and infrastructure. A growing demand for cheap goods and services also contributes for its expansion. The World Bank's *Structural Adjustment Programmes* (SAPs) in the 1980s and 1990s helped boosting the informal economy by cutting public sector jobs. There's also a widespread passivity among national governments to deal with the informal economy, which have led to infinite growth of the sector. The passivity is often rooted in a lacking knowledge about problems and possibilities in the informal economy (Sida, 2004).

URBANIZATION AND POPULATION GROWTH

As the world's population is approaching 7 billion, a major turnover in the worldwide population distribution is taking place. For the first time in history more people are today living in cities than in the countryside. In 1950, 86 cities around the globe had a population over a million. Today this number is nearly 400 (Davis, 2006). Urbanization is far from a new trend though, and in developed countries urbanization has already been going on for quite some time. In Sweden, for example, more than 8 out of 10 people live in cities (UN, 2007). The European

Poverty, mass-urbanization and insufficient housing strategies in the developing world has lead to rapidly growing slum areas. Today four out of five people who migrate to Delhi each year end up in slum areas.

population multiplied its size in the 17th to 19th century, and mass migrations took place (Correa, 1989). A lot of people ended up in poor slum areas in the cities. In the 19th century, large worker's suburbs with poor access to water and sanitary facilities were taking shape in Stockholm, and in many other cities in developed countries as well (Wimark, 2007). As far back as 600 BC, cities like Babylon proved great urban populations and trends of urbanization. It is however not until these days that urbanization has become a world-wide phenomenon (Ljung et al., 2006). In the rapidly urbanizing developing countries of the world, urbanization has partly led to spreading poverty, as the cities has not been able to accommodate and employ all these new residents, and expanding slum areas are an immediate response to the growing urban poverty (Davis, 2006). Over 60 years have passed since the United Nations proclaimed housing a human right in *The Universal Declaration of Human Rights* (UN, 1948). However, more people than ever before are now living in insufficient housing. Today, four out of five people who migrate to Delhi each year end up in slum areas (Davis, 2006). Many people are trading a life of poverty in the countryside for another life of poverty in the city. The Indian architect Correa argues in *The New Landscape- Urbanisation in the Third World* that being poor in the city is dehumanizing. If one is poor in the countryside on the other hand, at least you have space to meet, cook and wash your clothes (Correa, 1989).

Urbanization is however not bad per se as no country can accomplish strong economic growth and social development without urbanization. As mentioned, many rich developed countries are strongly urbanized and large, dense cities are by many considered important for economic development as they can keep public costs for transportation, services and transactions down, and more easily facilitate high-qualitative education. But even though economical growth demands urbanization, urbanization doesn't always lead to economical growth. Inefficient distributive policies, corruption and dysfunctional markets can cause devastating concentrations of poverty and inequity in growing cities (UN-HABITAT, 2008). In today's estimates, one billion people live in slum areas, which is equivalent of one out of every seven people in the world (Davis, 2006). The country worst off in this statistics is probably Ethiopia with remarkably 99.4% of its urban population living in slum areas. In India the number is 55.5% for the urban population (Davis, 2006) and 40% for the population as a whole (UN-HABITAT, 2008). It is a lot better than Ethiopia, but still almost half of the population. Most

of these slum settlements in developing countries are relatively new. Even though some major slums have longer histories, the majority have mushroomed up in the last 50 years (Davis, 2006).

THE MILLENNIUM DEVELOPMENT GOALS

In 2000, as the number of slum-dwellers in developing countries was steadily increasing, UN figured something drastic had to be done. As a result, they included slum reduction as a part of the *UN Millennium Declaration*. The declaration was a product of the September Millennium Summit in New York in 2000, in which world leaders and UN member states met and conferred on the role of the UN in the approaching 21st century. The declaration includes 8 goals or 21 targets, *The Millennium Development Goals* (MDGs), to be achieved by 2015. They mainly treat world poverty issues, child mortality rates and health issues. Target 7D is the slum target. The aim is to achieve a significant improvement in the lives of at least 100 million slum dwellers by year 2020. 17 experts in development agencies decided that 100 million slum-dwellers was a considerable, yet realistic, amount to be accommodated in proper housing in 20 years (UN-HABITAT, 2008). Today it turns out that the target was set very low, considering the high pace in which slums grow. UN-HABITAT's estimations show that 227 million people had been lifted out of a slum life, 10 years before the deadline. This is obviously incredible news, but brings up questions about the goal's validity. The number 100 million was only 10% of 2000's total slum population, and thus not a very big proportion (UN-HABITAT, 2008). The goal was also set as an absolute amount for the whole world. For individual national governments it became difficult to interpret their specific share of the goal. A clearer way would have been to set the goal as a proportion of every country's slum population, just like the other Millennium Goals. The fact that 227 million individuals across the globe have been helped out of a life in the slum since year 2000 is a big victory for humanity. The sad truth is that during the same time, the slum population continued to grow with 10% every year, ending with an actual larger number of slum-dwellers than when the goal was formulated in 2000, in spite of the Millennium Goals (UN-HABITAT, 2008).

India

New Delhi

Mumbai

Bangalore

POPULATION (PopulationLab, 2011)

China 1 330 141 295
India 1 173 108 018
USA 310 232 863
Indonesia 242 968 342
Brazil 201 103 330
Pakistan 184 404 791
Bangladesh 156 118 464

AREA IN KM2 (Geography,2011)

Russia 17 075 200
Canada 99 844 670
USA 9 631 420
China 9 596 960
Brazil 8 511 965
Australia 7 686 850
India 3 287 590

250 miles
Indias longest river Gagnes

NEIGHBOURING COUNTRIES:
PAKISTAN, CHINA, NEPAL, BANGLADESH,
BHUTAN, BURMA

Calcutta

30%
of population urbanized

42% of population
below poverty line of US 1,25 per day (

2,5
births per women

Chennai

(Wikipedia,2011)

PRECIPITATION MUMBAI DURING A
YEAR, IN MM (Mumbai Climate guide,2011)

710 mm

800
700
600
500
400
300
200
100

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

22.
officially recognised languages.

33.
different languages

2000.
dialects

50 MILLION GIRLS "MISSING" IN INDIA.
Female feticide - the sex-selective abortion of girls -
has led to a "gender gap" in the country's population at about
the size of the entire populations of Sweden, Denmark, Norway,
Iceland, Belgium and Portugal together. (Rama Mani et al.2005)

82% Hindu   12% Muslim   2% Christian   2% Sikh   2% Other

Religion

(Asian info,2011)

55% one religion

45% two ore more religions

02 LIFE IN THE SLUM

Being a slum dweller can manifest itself in many different ways. In cities in developing countries, common sights are congested clusters of sheds built out of corrugated iron, waste materials and plastic tarpaulin. Even though the quality of life, housing, incomes and health is widely varying in different slum areas, people in grave urban poverty have generally an extremely narrow range of choices. Out of a situation of pure survival, there's a constant outlook for any opportunity potentially better than the current, and a search for possibilities out of everything (Mitlin et al., 2001). Being forced to a life in the slum can thus bring out remarkable human creativity. In Cairo, 1.5 million slum dwellers live on top of the roofs of formal buildings. Up in the air there's plenty of unused space, and the air is cool and more pleasant than on the ground. In South East Asia on the other hand, floating slums are more common. In Hong Kong, boats used for a while to make up 10% of all housing stock (Davis, 2006). One more unusual type of slum is the encroaching unplanned settlements in Cairo's City of the Dead. *Cairo's population has grown extraordinarily in recent years. As a result, up to 1 million people have found a home in old tombs and cemeteries. Without electricity, water or sanitation facilities they inhabit the tombs as a consequence to the city's severe housing shortage (Levinson, 2002).*

THE TENURE DILEMMA

UN-HABITAT lists insecure tenure as one of the five aspects that defines a slum area (UN-HABITAT, 2008). The fact that many slum dwellers around the world squat on illegally occupied land, and thus live under a constant threat of eviction is obviously a major problem. Economist Hernando de Soto argues that the lack of land titles in developing countries is a main reason why capitalism fails there, and argues that titling is a prerequisite for growth and development in an area (de Soto, 2000). In the book *The Mystery of Capital – Why Capitalism Triumphs in the West and Fails Everywhere Else*, he states that the problem is not a lack of capital and savings amongst people in developing countries, but the fact that the assets are generally informal, which means the capital cannot be formally used – it is thus dead (de Soto, 2000). English architect Payne has another view, and argues that although formal titles might be to prefer in theory, it doesn't always work in practice in poor communities in developing countries. Offering formal titles to slum dwellers could instead counteract its aim, and force the poorest of the poor to relocate to some other form of informal housing.

Some sort of security of tenure is important for most people; without security of tenure there's a constant risk of eviction and

no incentive to invest in housing. There is however a difference between *perceived* security of tenure and *de facto* security of tenure (Payne, 2000). A slum dweller who has illegally occupied a plot for several years might have a high perceived security of tenure because no clear threats of eviction have appeared so far, while in reality a very low de facto security of tenure. In the 1980s, 100,000 slum dwellers in Pakistan's largest city Karachi, who illegally occupied a piece of land, were offered freehold titles for their plots. Only about 10% of the slum dwellers actually took up the offer though. Just by being offered freehold, they figured the area would not be cleared, and they would therefore be able to live there permanently anyway. Buying the plot would instead make them trapped with costly property taxes. In their case, their perceived security of tenure was enough to feel safe (Payne, 2000). Lusaka City Council tried an alternative method and issued renewable 30-year occupancy licenses to slum dwellers to give people an incentive to invest in their housing. As a result, most slum houses in Lusaka are built in rigid, permanent materials, even though formal property titles were not provided (Ljung et al., 2006). According to Payne, there's a problem incorporated in discussions about tenure system in black and white terms. There's a large range and complexity of tenure systems operating in developing countries generally based on widely varying historical and cultural factors, that cannot be simplified into legal/illegal

and planned/unplanned categories (Payne, 2000).

By offering titles to slum dwellers, there's a risk of causing gentrification in the area. When the plots receive formal tenure status their commercial value raises. This in turns means the plots become more attractive for dwellers from higher steps on the dwelling ladder, such as tenants with contracts already, lease-holders or free-holders. The ones least benefitted in this process, are instead the groups in most need of help who cannot afford raised costs (Payne, 2000). In Wimark's thesis about gentrification and slum rehabilitation, he is coming to the conclusion that gentrification happens in slum rehabilitation and land titling projects in developing countries just as well as in renewal projects in developed countries (Wimark, 2007). In one of his case studies, two settlements in Manila, the capital of the Philippines, are compared. One of the settlements had gone through a regularizing process in the 1990s, and was consequently a formal settlement. The other area was still informal, but with a high perceived security among the residents. The study showed that the formal settlement had gone through a severe gentrification through the titling process, but that the residents still didn't invest more time and money in their homes than their peers in the informal settlement (Wimark, 2007).

The effect of titling in a slum settlement is thus a difficult and widely discussed topic. Titling can cause gentrification, but discarding titling can instead hinder investment and spark off corruption, as many poor people are forced to maintain their illegal housing by bribing politicians, gangsters or the police (Davis, 2006). Living in an unplanned slum settlement illegally is thus rarely free, and it might in some cases even be more expensive than buying a plot legally (Davis, 2006). Even living in the streets can in some attractive locations cost you a substantial amount on the sub-market. When a city is growing, the land value is generally rising in attractive locations and this is also happening in many slum areas. In Mumbai, some old slum settlements have become such desirable spots in the city that prices for residing there have gone soaring. In Dharavi, one of Mumbai's largest and most famous slum settlements, squatter shacks are on the market for US$ 15,000, despite lacking any title, sanitation facilities, water, services, or paved access (Payne, 2000).

In India, the government solved a part of the tenure problem by declaring all slums built before January 1995 legal in the *Slum Rehabilitation Act.* Through the Act, slum dwellers squatting on

Sanitation and contaminated watercourses are big issues in many Indian low income settlements.

municipal land are protected from eviction as long as they can produce a document proving that they lived on the site since before January 1st, 1995. The act protects the slum dwellers from outright eviction, but as long as there's a rehabilitation scheme offered to them (no matter how badly planned or how far from their home), they have to accept the offer or become homeless (Kunte, 2011). The "legality" of their living is thus quite restricted. Also, expectorating such a document can be difficult for many slum residents, and it certainly doesn't help all the slum dwellers who live in slums newer than 15 years.

Slum developments are sometimes growing out of nowhere. Shacks are built over night and torn down the next day by police force, and rebuilt the following day again. More common however, might be the slow infiltration of slum housing into the city fabric (Davis, 2006). The slow intrusion is perhaps more accepted by other city dwellers as it happens gradually over time and doesn't cause an immediate change.

THE SANITARY SITUATION

The sanitary situation is one of the largest problems in many slum settlements, especially in very dense urban areas. The only toilets most slum dwellers have access to are communal or public toilets. These are often poorly maintained, located far from home and extremely overused (Mitlin et al., 2001). The sanitary crisis origins partially from the colonial era, when European colonizers in general refused to provide sanitary facilities and water infrastructure for the natives. In Africa and South Asia, where colonization was especially evident, this problem is thus somewhat larger than in other parts of the world. Some major cities, like Kinshasa, the capital of Democratic Republic of the Congo, with its nearly 10 million inhabitants, lack waterborne

sewage systems altogether. In India, an estimated 700 million people have to relieve themselves in public (Davis, 2006). Women are generally most affected by the situation, as they are expected to maintain certain privacy. A result is that many women have to wait until nigh falls before they can relieve themselves, when the risk of human assaults and snake or scorpion attacks are larger (Davis, 2006). Providing toilets have accordingly been a vital issue in many slum upgrading projects. In 1994, a new sanitation programme was introduced in Mumbai by the municipality. 20,000 new toilets were to be provided to the city's pavement and slum dwellers, and to make the implementation successful, NGOs and grass-root organizations got involved. The outcome was a new successful arrangement where communities were involved from scratch in the process of designing, constructing and maintaining the toilets. This way, well-constructed and easy-maintained toilets were provided that the poor communities were eager to manage and maintain. To be put in contrast with toilets built in previous projects that deteriorated quickly as a result of poor maintenance by the municipality, this was certainly a success (Mitlin et al. 2001).

In many slum areas, excrement is a huge problem and a breeding ground for diseases. Experiments to use the faeces as a resource are thus desirable. *Wherever the Need* is a registered UK charity working with toilet issues in a number of countries, for example India. Their *Eco-Sanitation Toilet* is built on demand from, and in close relationship with poor communities. They are water-free and constructed mainly by women. In five months, pathogen free compost is produced out of the excrements, which can be used for making pellets or growing crops (Wherever the Need, 2007). Quite easily, a hazardous waste product is thus turned into an asset. A similar idea but in a much simpler form, is the *Peepoo bag*, invented by the Swedish company Peepoople AB in 2006. The Peepoo bag is a small bag of biodegradable materials in which people can relieve themselves, and store the bag for up to 24 hours in a living environment without sending out odour. The bag can later be dug down in the ground to fertilize the soil (Peepoople AB, 2011).

EMPLOYMENT

One common misconception of slum and pavement dwellers is that they are unemployed and in the transition phase to the city from surrounding areas. This is generally not true. In 1995, Mumbai had approximately 1 million pavement dwellers. Research showed that 97% of them had some source of income and 70% had called Mumbai their home for at least six years (Davis, 2006). Many slum settlements are hubs of creativity and production. Estimations show, for example, that every person in Europe and the US on average own something that is made in the Mumbai slum of Dharavi (Iyer, 2009). However, most slum dwellers have their main income in the informal economy. Even though the informal economy definitely has benefits, informal employment tends to trap slum-dwellers and other young low-income people in long-term poverty (UN-HABITAT, 2008).

Another delusion is that all urban poor live in slums and that all slum-dwellers therefore are poor (Davis, 2006). In Dar el Salaam, Tanzania, for example, where 70% of the population lives in slum areas, there is a big variety of slum dwellers. Highly educated and powerful people such as government ministers, university professors and rich businessmen are, just like the extremely poor, living in the slum (Mrema, 2008). They may have chosen to lack some sanitary facilities or secure tenure for a central location closer to work and social networks. For many poor city dwellers, location is first priority, housing second. Rather than a formal accommodation in a distant suburb far from jobs, an informal housing (or even the pavement) close to job opportunities is to prefer (Davis, 2006). Even though many slum and pavement dwellers prefer life in a central location close to markets, factories or other job opportunities, most low-income areas in developing countries are located in the urban periphery (Davis, 2006). Research looking at cities like Karachi, Khartoum, Lusaka, Mexico City, Mumbai and Rio de Janeiro shows that more poor people live in peripheral slums than inner-city slums (Davis, 2006). The inner city and periphery proportions are widely varying in different cities, but are in general following the European model of a saucer shaped city rather than the American doughnut (Davis, 2006). Bangalore is a typical example of this, which constantly drive out poor people from its high-tech city centre to the outskirts. The periphery of Bangalore inhabits today over two million people in severe poverty (Davis, 2006).

DOOM AND GLOOM?

A life in the slum is for many people a last resort, an alternative forced on them when there are no better options. However, painting the slum in doom and gloom and depicting all slum

One common misconception of slum dwellers is that they are unemployed, while slums in fact often are hubs of creativity, production and entrepeners. Left: Hotel in Dharavi, Mumbai. Right: Business suits in Dharavi, Mumbai.

dwellers as victims, is unfair. As the previous Dar el Salaam example shows, some people are voluntarily choosing a slum life and consider slum housing superior to other formal options. In spite of the numerous problems in slums, many slum settlements incorporate fascinating survival strategies and sustainable ecological systems that we could learn much from in developed countries. The low use of resources is often remarkable compared to our western consumerist way of life, as is their way of persistently adapting to changing conditions. The British Prince Charles recently praised the slum settlement of Dharavi in Mumbai for its order and harmony and says that us Westerners have *"a great deal to learn about how complex systems can self-organize to create a harmonious whole"* (Hough, The Telegraph [online], 2011). His UK charity *Prince's Foundation for the Built Environment* is planning to build a series of eco-developments in India inspired by the multi-functionality and organization of slum settlements (Hough, 2011).

American and Indian economists Hart and Prahalad turn in their article *The Fortune at the Bottom of the Pyramid* also against the prevailing victimization of the world's 4 billion poor. They argue we need to change our ways of thinking of the poor, and stop consider them as inert burdens. Instead we need to see the great and unexplored economical growth potentials incorporated in this group. They use the example of walking down a street and finding a $20 bill. Conventional economic logic suggests that if the bill really does exist, it would already have been picked up. The same applies to the poor. Contrary to people's assumptions, the potentials of the world's poor simply haven't been explored yet – and combat poverty could indeed be incredible profitable. Multinational companies with resources and persistence to be involved at the bottom of the wealth pyramid, can thus easily be rewarded with vast growth, profit, and an immeasurable contribution to humanity as a bonus (Hart et al., 2002).

03 SLUM REDUCTION
- IN THEORY AND PRACTICE

From previous chapters one could assess that there are multiple social and health related problems with today's slum settlements. Around the world, various ways of trying to battle this huge problem has been in focus, and this chapter will go through some main threads in the history of slum rehabilitation. It presents current rehabilitation ideas, and problems occurring in the midst of the way slums are dealt with; in the world in general and in India in particular.

CLEARANCE AND RESETTLING

In Sweden in the mid 20th century a large portion of the old building stock was extensively run down with poor sanitary facilities. The general idea, in accordance to the current modernism era, was then to demolish the old and build new. Eventually, these ideas gradually changed, and today there's a much stronger belief in preservation and reuse (Dahlberg, 2010). In the developing world, the course has been similar, although slower and less forceful. In the 1950s and 1960s, demolishing slum areas was a frequently used way to try to get rid of squatters. In Mumbai for example, the government and municipality cleared slum areas in high speed and figured that

would solve the problem; zero slum settlements equals zero slum dwellers. Eventually it became obvious that this equation didn't quite work. Evicted slum dwellers didn't leave the city just because they became homeless, but instead rebuilt their sheds again on the same spot, or somewhere close by (Burra, 2005). As a consequence, a new strategy eventually evolved, where resettling with *rehabilitation* became a key component in all slum clearance. As the slum dwellers were evicted they were thus offered resettlement housing in a new location. The World Bank had been heavily criticized for their brutal standing in slum eradication, and resettling now seemed like a more realistic and humane way to approach the slum (Burra, 2005). However, resettling didn't turn out to be a perfect solution in practise either. Millions of people have at present been resettled around the world, often with unsuccessful outcomes. In Hong Kong in 1971, one million slum dwellers were evicted and displaced out to the city's periphery, on an area equivalent of a mere third of their original land. No consideration were taken to the fact that many slum dwellers had workshops or shops in their huts, and thus needed to have ground-level flats, preferably close to markets or factories (Davis, 2006). Another example is in Manila in the 1970s, when 160,000 people were displaced in remote suburbs just to clear the view for the visit of the American president Gerald Ford. Large-scale displacements and evictions

are still happening around the world. One more recent example is the preparations for the Olympic Games in Beijing in 2008 when 350,000 people were displaced – just to make room for the new Olympic stadium (Davis, 2006). When displacements are made this way, people's social networks and employment pattern are seriously altered, and a natural response by the slum dwellers is to frankly leave or sell their new home and move back as a squatter to the city again (Correa, 1989).

A common strategy intended to combat urban poverty and slum development, used by several countries through history, has been to prioritize *rural* development (Burra, 2005). In India this is still the case, and ever since India's Independence in 1947, a vast priority of resources has been given to rural areas. By investing in the livelihoods of the urban poor, the government fears to spark off a rural-urban migration (Burra, 2005). Since urbanization the last decades have been of such immense character, and 35% of India's population now lives in cities, this approach obviously hasn't worked very well.

Panorama view of Dharavi slum settlement with rehabilitated (high rise) areas, Mumbai.

THE PROVIDER MODEL VERSUS THE SUPPORTER MODEL

The British architect John Turner worked as a governmental advisor on housing in Lima, Peru, in the 1960s. Through his work with slum rehabilitation areas across the country, he came to notice how badly the prevailing ideas of mass-produced, minimum-standard rehabilitation housing worked in reality, and how much knowledge and skill there actually was on construction work among slum dwellers. He then turned against the established policies on slum rehabilitation, and advocated what would later be referred to as *enabling strategies*. The traditional way to handle slum areas with slum clearance and provision of minimum-standard housing for the slum dwellers, could be referred to as a *provider model*. What Turner promoted would instead be described as a *supporter model*, where the government enables people to upgrade their living rather than provide them with housing (Vestbro, 2008).

The provider model is based on the idea of fast production of a large number of houses, delivered in as little time as possible, which is considered best done through standardization and prefabrication. Its supporters argue not only for a higher standard of living but also how it can kick-start the economy, create employment and generate profit. Its opponents, however, claim that even if the national economy improves, the slum dwellers have no advantage of this since the model does not work in practice when slum dwellers' resources are used to construct expensive housing that in the end falls in the hands of the wealthy (Ackelman et al, 2008).

The supporter model on the other hand is based on the philosophy of authorities *supporting* people to build housing, instead of *providing* them with houses. In this model the residents themselves and their needs play an important role in creating variation and local adaptation. Its supporters argue that building houses has little to do with solving the housing problems, and that houses become an integrated part of a larger system of urban development. Although there is evidence of the success of the supporter model, there has also been strong opposition against it - mainly because it requires the recognition of illegal occupation of land and because it reduces the role of authorities and planners. Governments and the industry prefer the provider model as calculations show its economic profit. Furthermore, according to some critics, people prefer ready-made homes, built to higher standards than they can achieve themselves. (Ackelman et al, 2008)

The major difference between the models is that the supporter model does not consider the house itself the most important, but the security of tenure, and that people themselves have a chance to upgrade their homes over time. Through participation of the slum dwellers, conditions are created, ensuring an end result that will satisfy its inhabitants to a much greater extent. But this may take a long time, which can create impatience. The provider model is on the other hand fast with visible results and rapid improvements of poor living conditions (Ackelman et al, 2008). Turner initiated the ideas of enabling strategies and the "supporter model" as early as 1960, but it wasn't until the Habitat II conference in Istanbul in 1996 that Turner's ideas truly became integral parts of the slum rehabilitation discourse (Vestbro, 2008). Today, 15 years later, the provider model is however still strongly advocated around the world, not least in India.

IN-SITU UPGRADING

In the wake of the ideas of "enabling strategies" and "self-help", *slum upgrading* soon became a frequently used term in official documents, especially in the world of NGOs and development organizations. After decades of slum clearance and displacements, slum upgrading projects sought to improve living standard and

services *in-situ*. This way, much less people had to move and projects wouldn't cause domino effects of relocations around the city. Some NGOs took up this idea and started to work with bottom-up approaches rather than the conventional top down control. Grass-root movements and community participation became essential parts of the process. Where resettlements were unavoidable, for example when specific land was needed for public infrastructure, analyzes of people's living pattern were to become the base for determining resettling location. Today, there are different slum upgrading projects going on around the world, although still in very small scale; aid organizations, NGOs and governments working with different approaches to provide housing for the urban poor. Even though many organizations and governments around the world are still stubbornly using the old approach of complete demolition and new construction, new methods are definitely coming (SCC, 2005).

Slum upgrading is however a vague term, and could be interpreted and defined in different ways. UN-HABITAT emphasize the multi-functionality of the term, and says it embodies *"many differing approaches to localized urban development from the provision of new infrastructure in existing informal settlements where residents would then be helped to upgrade their own homes, or relocating slum dwellers in new housing often built by themselves, to extended layouts with services for self-build, or ultimately to cooperatives undertaking new area developments of affordable housing combined with enterprise opportunities"* (UN-HABITAT, 2006 p.5).

To narrow down the term, we have in this thesis chosen to define slum upgrading as an in-situ method to improve living conditions for slum dwellers, using existing structures (such as homes, roads or network of public spaces) to some extent. One approach of slum upgrading is naturally an improvement process of everything existing in the slum; upgrading of roads, addition or reparation of existing water pipe systems, construction of social service buildings, reparation and rebuilding of existing houses etc. Not everything can however be upgraded in a slum, and some houses or even whole blocks of houses, must generally be demolished and reconstructed from scratch. The degree of provision from the government or involved organization can differ. Sometimes only basic services and formal tender such as water supply is provided, along with advising and knowledge sharing on construction methods. Other times the government/organization might provide new houses as well. Generally one

can say that upgrading is part of the supporter model rather than the provider model. However, there is a vague boundary between the two, and even in a supporter-based upgrading project, certain amenities like piped water are generally provided by authorities. Or perhaps entire buildings are actually being constructed by the authorities or NGO in a slum upgrading project. Whether such a project is supporter or provider is then hard to assess.

Helena Ackelman and Maria Andersson (Ackelman et al. 2008) are listing different approaches on slum rehabilitation in their planning thesis from the The Royal Institute of Technology in Stockholm. These include for example *core housing* and *site-and-service*. If performed in an in-situ project, both methods could be parts of the slum upgrading model. Core housing means provision of a very basic dwelling unit with basic services, which could be upgraded successively over time as more finance become available for the slum dwellers. The core house could either be made as a habitable house with all major components included, or as a less completed unit (for example only the foundation slab, or the house "frame"), where slum dwellers has to do certain inputs on the home in order to make it habitable. The site– and– service approach relies instead on the notion that slum dwellers are able to build their whole homes themselves, and thus no houses are provided (Ackelman et al, 2008). The approach has become increasingly popular in recent years, and is supported by the World Bank (O'Meara, 2010). The only facilities provided are the formal tender for the plot and services such as water, electricity, roads and social services. The rest is built entirely by the slum dwellers themselves (Ackelman et al, 2008).

Sida supports in-situ upgrading ideas, and lists three main target points in their current housing projects in developing countries;

- Loans, with or without coupling to government subsidies;

- Local participation, from the concerned families and the local authorities;

- Advising the concerned families on construction and up-grading to keep costs low (SCC, 2005).

These three targets appear to be a main thread running through many aid organizations worldwide in their ideas of upgrading work with slum settlements, and will be presented briefly below.

Micro loans and micro savings in various forms are growing schemes, and a compliment to formal mortgages. Formal housing institutions have in many countries a very limited ability to provide enough loans. One example is Uganda with its population of over 30 million and only 200 formal mortgages issued every year (Ljung et al., 2006). Micro loans thus come in handy for the poor portion of the population. They have proved quite successful in some cases in comparison to pure house donations. Attempts to build formal housing and give it to slum dwellers for free or at a very low cost might seem like a generous and good way to go if there's sufficient funding. However, this has proven unsuccessful in many cases since it often entice people to sell the unit at market price, save the money and move back to the pavement (Correa, 1989). In some rehabilitation projects in India, contracts are signed by the slum-dwellers that officially hinder them to sell their house for a certain amount of time, often 10 years. Sida has however been consistent in their approach to never offer housing completely free though, but instead propose so-called revolving funds where money is distributed through loans for house building or upgrading (SCC, 2005).

LOCAL PARTICIPATION

The second of Sida's core ideas of upgrading is a very central ingredient of this "new way" of handling slum areas; participation. Local participation might seem like an obvious ingredient in a slum rehabilitation project, but has still been incredibly absent in many previous and current schemes. This lacking ingredient is a main reason why so many projects have failed. However, more and more organizations have nowadays communal participation as a core building stone upon everything else is built, at least on the paper. Participation can be performed at different levels, and the level of participation can also largely differ. It might not be a matter of course that people in an area *want* to participate in new projects. If they cannot see a clear personal benefit of it, there's a great risk they won't give it their precious time. It is thus important for NGOs and other organizations to be particularly open and clear with aims and probable outcomes of the project from the beginning, so that slum dwellers know what to expect. A few enthusiastic community members can, however, eventually spark the participation of many more (Mitlin et al., 2001). In Mumbai in the 1980s, the Indian Railway decided to draw new train tracks through the central peninsula. As the

Slum in Bangalore showing good structures that could be upgraded rather than demolished and built up from scratch.

areas were populated by slum dwellers, calculations showed that 1,980 families would have to be displaced in the project. A conventional way to go for the Indian Railway would then have been to find an alternative location for the slum dwellers, and simply resettle them there. Instead, the public officials and slum communities developed a solution which addressed their mutual needs. SPARC and the grass-root organization NSDF were consulted to work with the concerned communities throughout the whole resettlement process. Through participation, families were involved in working out a suitable resettlement location that would ultimately fit their networks. A piece of municipal land in the suburb of Ghatkopar in northern Mumbai was eventually chosen. SPARC/NSDF helped preparing the concerned families for the resettlement by initiating a micro saving system. By the time of resettlement, each family had already saved RS 3,500-5,000 to pay for parts of their new, formal housing. For the authorities, this settlement project was essentially different from previous schemes. The fact that people were actually moving voluntarily was very unusual (Mitlin et al., 2001). Projects like this are necessary precedents for governments to consider other alternatives than the conventional. Since engaging with governments is critical to be able to scale up poverty reduction, more projects like this are needed (Mitlin et al., 2001). As participation has become somewhat "trendy" recently, there's a slight risk of misuse of the concept though. Involving concerned communities in slum upgrading/resettlement projects always looks good on paper, and is thus sometimes only used in very initial stages to keep up a beautiful facade. Sheela Patel, founder of SPARC, believes social change that is beneficial to the urban poor must be developed in close participation with concerned parts, throughout the whole process. She argues *"large-scale changes are only possible if the solutions are rooted in the logic of the people"* (Mitlin et al., 2001). Transparency is another factor vital for successful participation. When there's a negotiated agreement between communities and municipalities, it is important that all information on project finances and the parties' fulfilment of obligations are available for everyone to take part of. Participation will simply not happen if the poor is patronised and overlooked (Ljung et al., 2006).

ADVISING ON CONSTRUCTION METHODS

The third of Sida's core upgrading ideas is advising people on construction methods in order to enable them to upgrade their housing themselves. Building a house or performing upgrading construction work without professional help is often the only way a poor family can approve their living conditions. Advising concerned families on construction and upgrading methods to keep costs down is thus of great benefit. By guiding a few families, there's also a chance that the word of mouth will spread tips and advice around the neighbourhood. The Swedish NGO Swedish Cooperative Centre (SCC) has many housing projects in poor slum settlements in Latin America. In their schemes, the slum dwellers construct all the buildings themselves. SCC's role is to form housing cooperatives out of interested households, and to provide knowledge about the actual construction. Prior to the construction, workshops and training takes place to prepare for the works. Throughout the construction phase, a skilled SCC member is always present to solve problems and guide people through the development (SCC, 2005). Showing simple prototype housing modules that easily can be upgraded over time is another way to help people understand ways to improve their homes. A group of architects working for SPARC and Mahila Milan was in a slum upgrading project in Pune, India, using the existing urban structures of a slum settlement as starting points for redevelopment and incrementally upgraded the settlement over time. "Incremental" housing refers to a successive process where the house is not a final product, but can be extended and changed according to its inhabitants' needs. A narrow house with a small footprint was created as a model in the Pune project, and showcased in interactive community workshops. The small house could eventually grow in all directions, making every addition cheaper by sharing structures, walls and infrastructure with the previously built sections. Eventually, cooperatives of several families could evolve (Mahila Milan et al. unpublished) (See also the " Three successful slum rehabilitation schemes in India" section in the end of CHAPTER 3).

GENTRIFICATION

As mentioned earlier, a potential outcome of slum upgrading is gentrification. In Wimark's thesis, different case studies, mainly in Africa, are brought up and compared. His research showed that many renters, plot owners and squatters had to leave slum settlements in the case of an upgrading process since they couldn't afford paying for the raised standards or were pushed away by commercial forces (Wimark, 2007). A few exceptions were however presented where well thought-out processes helped poor people to stay in the area throughout the upgrading process. One example was the informal settlement of *Mathare 4A* in Nairobi, Kenya, where different sectors collectively worked on the project. The stakeholders included for example the state, a German aid organization and the Catholic Church. The reasons no gentrification could be identified in the process was because of a number of carefully prepared actions. These included communal participation throughout the whole process; a strict registration process that made sure only inhabitants of the area could allocate the upgraded homes; flexible rents based on the different households ability to pay; only build new units on vacant land so that no one would be evicted before they had a new home to move to (Wimark, 2007). Contracts that binds people not to sell their home for a certain amount of years, are also a way to avoid immediate speculation in rehabilitated slums. This approach could, however, possibly just postpone a gentrification process instead of preventing it.

Whether gentrification in a slum upgrading process is entirely a bad thing can however be debated. Many urban planners advocate a diverse city where social classes, ethnicities as well as functions are mixed. In general, slums are inhabited mainly by low-income families, and one aim with slum upgrading should therefore be to make the slums more mixed and integrated in the city. If a slum settlement goes through a rehabilitation process and still remains a purely low-income area, one could say the process has somewhat failed to integrate the settlement into the city. As a gentrification process happens, people from higher social groups penetrate an area and makes it more socially mixed. These families leave other homes in the city vacant for people to move into, and a chain of housing moves starts. As a slum is being upgraded, slum dwellers move on to the "formal" housing market, and their standards of living and personal economy are likely to rise. In a successful slum upgrading scheme one would then assume that people eventually won't be forced to stay in their area if they don't want to, but can chose to move, and take part in the city-wide chain of housing moves.

THE LARGER CONTEXT

Correa is arguing that the problem in developing countries is not one of housing shortage, but rather of a lack of urban context; trying to solve fragments of the city matrix is not going to solve the major problems. Instead we need to look at the entire spatial system and identify optimal living patterns in their totality

The actual house is just one element in the whole system of spaces humans need. A good home also hold a sense of community, security and belonging, spaces to meet and share, playgrounds and neighbourhoods, such as this community space in Leprosy Colony, Bangalore

(Correa, 1989). He thinks infrastructure such as efficient railway systems should be a top priority in slum reduction issues. Trying to relocate a city squatter in a distant suburb will never work unless the infrastructure and public transportation system is well developed and subsidized (Correa, 1989). This is to some extent what Correa also intended to do in his plan for Greater Mumbai (former Greater Bombay) in the 1970s. The plan was a large-scale planning proposition which intended to create a twin city of Bombay ("New Bombay") on the main-land across the bay from the city peninsula ("Old Bombay"). By decentralizing the city and relocating some influential institutions, New Bombay would relieve the pressure on the heavily congested peninsula and attract a portion of Old Bombay's urban poor. New Bombay would be a new, vibrant core with a mixed range of people and employment opportunities (Correa, 1989). Correa's plan was to some extent realized, but with a slightly disappointing outcome. Like several other cities' attempts to create functioning satellite cities, New Bombay became mainly a middle-class commuter's city with little attraction to central slum dwellers (Davis, 2006). However the outcome of New Bombay, the ideas of Correa are valuable. In cities where slum settlements make up a majority of the population, big plans and big interventions are needed just as well as the grass-root activities. Urban planning requires a close study of the large picture, an identification of the complex matrix of systems and networks that make up the urban mosaic. Without a greater plan, the grass-root activities cannot work towards a joint goal.

It is important to also put housing for the urban poor in a larger context. It is easy to fall into habits of looking at housing in solid statistics of water quality and square meters, while a home obviously comprises more than just shelter and sanitary services. A good home also hold a sense of community, security and belonging, spaces to meet and share, playgrounds and neighbourhoods (SCC, 2005). It is essential to remember that the actual house is just one element in a whole system of spaces enabling a good living environment. Correa argues that there are four major elements to be considered; private, intimate contact, neighbourhood meeting places and principal urban area. Each element consists of both covered and open-to-sky spaces. In India, 75% of all essential and daily activities can occur outside in up to 70% of the year, because of the advantageous climate (Correa, 1989). Accordingly, the actual house doesn't necessarily hold the same noble position that we are so particular about in many western countries, and the boundaries of inside and outside are somewhat dissolved.

35

THE SITUATION IN INDIA

As just described, there are progressive ideas of more considerate ways of slum rehabilitation prevailing internationally today, contrary to the earlier ruthless methods of slum clearance. In theory these alternative ideas flourish widely, but in practice in India the successful projects are however hard to stumble upon. Some parts of slum rehabilitation processes are frequently and successfully carried out in various projects; participatory procedures, saving schemes, toilet construction projects and health related slum upgrading issues. Successful whole-embracing slum rehabilitation planning with thriving physical outcomes are however rare. It seems like the good intentions aren't always enough to cover slum rehabilitation projects from A to Z. Great preparation work might be done with democratic participation efforts and bottom-up mobilization and saving schemes, but from the interviews we performed in India in combination with our own observations, we concluded that the actual outcome and physical structures of slum rehabilitation schemes turn out unsatisfactory in many cases.

Jennifer Davis, Development Planning Professor at the Massachusetts Institute of Technology (MIT), is emphasizing the lack of successful precedents by stating that there are successful slum upgrading projects, the problem is that these often only process a small fraction of those in need of help. What is requested are successful slum rehabilitation strategies that work equally well on 100 households as with 10 000 (Davis, 2002).

"Bombay Model" rehabilitation in Mumbai

and inactive water pumps, only pumping water once a day. Maju Varghese of the Mumbai-based NGO YUVA (Youth for Unity and Voluntary Action) is sceptical to the prevailing high-rise solutions for slum-dwellers. Apart from the costs of running elevators and water pumps, he thinks the high-rise projects often create unpleasant ground space. To maximize the ground space, the tall buildings are generally placed close together and effectively generates dark, unpleasant gaps that attract garbage, rats and breeding mosquitoes rather than human activity (Varghese 2011). In comparison to the bustling slum streets of all slums we visited in India, we found this quite a depressing sight.

Instead of eradicating the problems of the slum, new 'vertical slums' are effectively created through the Bombay Model, with new types of problems. In theses vertical slums parents are unable to watch over their children's play, and adults lose their community connection and the possibility for micro enterprise on ground level (Columbia University, 2009). When walking through the slum streets of Dharavi, it is very obvious when you stumble upon one of these rehabilitation projects since those appear like fenced and maladjusted cut-outs in the lively context.

A REPEATING PLANNING FAILURE

In 1987-1992, the Bangalore City Corporation (BCC) built 24 blocks of totally 1,512 apartments in Eijipura, central Bangalore, for the city's poor (Kumar, 2011). Ten years later, the buildings started collapsing due to poor quality and deficient maintenance. In 2002, the first housing blocks buckled down, and left two dead and several injured in the fall. The following years, more blocks collapsed and a total number of seven people died (Dutta, 2008). Eventually, all buildings were demolished to avoid further accidents, and tin sheds were erected on the site for the homeless. Today, almost 10 years later, the tin sheds are still on the site and people are patiently waiting for some kind of rehabilitation. The Eijipura case clearly shows the lack of care and long-term thinking that is commonly put into housing for the urban poor in India. The buildings in Eijipura lasted only ten years, which is a very short life span for this type of large, permanent multi-family buildings. Resources were used carelessly and put into bad constructions and a poorly planned area, creating short-term solutions for immediate remedy without much long-term vision. When the buildings collapsed, the government stood perplexed and unable to solve the situation. A wiser way, looking in the rear-view, would obviously have been to put a substantial

THE BOMBAY MODEL

Something described as the "Bombay Model" is used widely nationwide in India without much site-specific consideration or large-scale planning. The model refers to a provider-oriented high-rise solution for slum dwellers, either on the ground of a previously demolished slum, or in a resettlement location (Varghese, 2011). Since urban slum areas in most locations in India are exceptionally dense and built in an irregular mode, the high-rise model sought to bring order and release open space. Unfortunately, monotony, undesirable ground space, poor maintenance and social problems often come as a side effect. The Bombay Model doesn't take existing structures into consideration, but demolish the slum and start from a blank sheet. Many examples of this practise can, naturally, be found in Mumbai (former Bombay). Around the large slum settlement of Dharavi, some projects in the wake of the Bombay Model have been realized. In the sea of low-rise slum huts, large-scale high-rise concrete buildings appear. With their 7-10 storey designs they are quite striking in the context. What is also rather striking is their vast degree of deprivation. Some of the high-rise towers are only a few years old, but crumbling already. In a general five-story apartment block, the cost of running elevators and water pumps for the building is RS 40 000 (approx. 900 USD) per month (Varghese 2011), which is an enormous amount for the low-income households to share. This often result in broken elevators

Walls with gates surround the large-scale rehabilitated areas in Dharavi, Mumbai

amount of time, effort and consideration into the project the first time, avoiding the costly and emotionally painful process of starting the project all over again some years later. It is easy to be wise after the event though, and criticize processes and choices. What happened in Eijipura happened due to decisions taken 20 years ago, and there's no way to change that now. However, such a failed project should stand as an example of how *not to* perform slum rehabilitation. It should be analyzed and form a foundation of decisions taken in future slum rehabilitation projects. Why did the Eijipura settlement fail? How was construction and design performed? Does this type of settlement really suit slum dwellers? Why weren't the buildings maintained? Many "unprofessionally" constructed slum huts stand the wind and weather for decades without collapsing – how come unplanned slum huts can stand the test of time, while these "real" buildings cannot?

The problem is that these lessons were never learned, and the same mistakes continued to be made over and over again. Standardized rehabilitation areas are being built in similar high-rise manners, perhaps with better construction methods than in Eijipura, but with the same degree of quick deterioration and social unsustainability. The former slum dwellers cannot afford to keep elevators and water pumps running, and they feel no commitment or sense of responsibility towards the impersonal, unpleasant public spaces and large-scale buildings.

One major resettlement project in Mumbai that has gone a similar course as the Eijipura settlement, is the newly built Mankhurd resettlement in north-eastern Mumbai. The constructions of high-rise multi-family homes begun in the mid 2000s and have resulted in a huge resettlement "ghetto" of approximately 50,000 people (Varghese, 2011). The new inhabitants are dislocated pavement dwellers as well as slum-dwellers from 122 slums across Mumbai. Even though the Mankhurd settlement today has a few years of history, the social infrastructure is still poorly built out. Only one public school and one private school with admission fees (which most former slum dwellers are unable to pay) facilitate the inhabitants, there's no street light (Varghese, 2011), and no clinic established (YUVA, 2008). Late night bus services to central Mumbai for domestic workers and other shift labourers are also very poorly developed and have led to an extremely high percentage of unemployment. The high-rise design is an obstacle for people's possibilities in keeping a workshop or shop, which is one of the main advantages of the low-rise slum. This, in combination with the poor transportation infrastructure, has resulted in both a soaring personal economy and an acute frustration among the dwellers. Many people lost their jobs in the move, and have not been able to create new work in Mankhurd. The buildings are deteriorating already with major leakages (both internal and on external galleries) and with worrying damages on the building foundations (YUVA, 2008). How can a resettlement area be planned this way when there's black-on-white experience from Eijipura that this is not the way to go to develop socially and economically sustainable neighbourhoods?

Obviously Mankhurd is, just like Eijipura, subject of a lot of planning failures, both physically and socially. The troubling part is however that there should have been enough knowledge before Mankhurd was developed, to have done it differently. And even after the failure of Mankhurd, projects like this are still mainstream in slum rehabilitation in India. Pre-fabricated high-rise housing is basically the one and only way to go, and there is a widespread acceptance in governments as well as non-profit organizations of this.

The buildings in Mankhurd resettlement area in northern Mumbai are crumbling, even though they were built less than 10 years ago

*Eijipura slum settlement in Bangalore went from slum
to large-scale rehabilitation and back to slum again*

An attempt to make a tin shed a home.

SPARC
– A MAJOR INDIAN NGO

SPARC is a major actor on the Indian NGO scene, and our "case NGO" in India. We were introduced to SPARC in December 2010 as we were researching the possibilities to do our Master thesis within the fields of urban planning and slum rehabilitation in India. As a major organization and in the cradle of starting up a slum rehabilitation scheme in Leprosy Colony in the explosively growing city of Bangalore, they turned out to be an interesting institution to study, and a good resource for us in our studies. With its two community-based sister organizations Mahila Milan and National Slum Dweller's Federation (NSDF), SPARC form a federation commonly known as the *Alliance*. Jointly, they have been working for increased rights and raised living standards for India's slum and pavement dwellers for over 25 years. The work of the Alliance's has grown into a major, influential organization since its start in the 1980s, and is nowadays dispersed over India. Its size makes it a very powerful force to lift the voice of the urban poor (SPARC, 2010). Swedish organizations such as *Arkitekter Utan Gränser* (Architecture Sans Frontières) have been working with SPARC in various projects, and the NGO has a good reputation internationally. It is therefore extra interesting to study this organizations work, as it is considered one of the best and most influential NGOs working with slum rehabilitation issues in India today.

SPARC was founded in 1984 in Mumbai by Sheela Patel as an organization focusing on helping pavement dwellers – the most exposed and marginalized group of urban poor. The very first task undertaken by the organization was to provide a forum for discussions and knowledge-sharing for poor pavement dwellers in Byculla, Mumbai. The group of pavement dwellers were constantly harassed by the police force and threatened by eviction. As a small organization, SPARC didn't have influence nor resources to solve the problem per se. What they had was instead the ability to create a medium for discussions, where the pavement dwellers together could mobilize and share ideas.

This first project is quite telling about SPARC's future undertakings. Instead of providing poor communities with aid, they have persistently tried to work with bottom-up ways of helping people to help themselves. By grounding their work in communities own abilities and ideas, they have been largely successful in mobilizing

the urban poor and achieving vast changes for thousands of people. As the organization grew in the mid 1980s, it came to widen its focus from pavement squatters to also involve slum dwellers. SPARC eventually formed a collaboration with the two organizations Mahila Milan and National Slum Dweller's Federation (NSDF), also committed in helping the urban poor (SPARC, 2010).

Mahila Milan is Hindu for "women together" and was formed by a group of poor women demonstrating their disapproval of the clearance of a slum settlement in Mumbai in 1986. The organization is a grass-root organization run mainly by women, for women, and focus on credit and saving activities in poor communities. Reworking the role of women among the urban poor, and supporting women in influential leader positions are also some of their main goals. NSDF is a co-operation of nearly half a million slum dwellers across India. Their work is focusing on ways to increase slum dwellers' human rights and life standards, and solving various issues concerning their situation (SPARC, 2010). As a joint federation, SPARC, Mahila Milan and NSDF are targeting all the central issues of the three organizations with the poor's right to the city being the basic aim. In the 1990s, as the organization grew, it managed to take on larger projects such as building homes (Mitlin et al., 2001) through their own non-profit construction company, NIRMAN, (Kunte, 2011) and open serious negotiations with governments and international agencies (Mitlin et al., 2001).

CORE ACTIVITIES

The alliance's key activity, of which everything else more or less is revolving, is their community participation work. In most of their projects, community mobilization is key. Their community oriented work is also the main reason why local governments and other municipal organs contact the alliance for help in slum rehabilitation projects (Samuel, 2011). SPARC member John Samuel in Bangalore describes the Alliance's work as a bridge or a negotiator between the government and the community. Without the Alliance's help, the communication between the two is generally poor. The Alliance builds up a close relationship with concerned communities and develop their capacitiy so that they are in a position to drive the developmental processes through negotiations with the government. Because of the numerous cases of governmentally performed forced evictions and demolitions in India's slums, slum dwellers often have a

sceptical approach towards governmentally steered projects. The Alliance, due to their work with various communities, therefore has the possibility to presents a way for the inhabitants to actually benefit from the process, which opens a way for interest and understanding. Through mutual trust, changes can eventually be made (Samuel, 2011). In some projects, the Alliance's work ends after the first community mobilization phase. Normally, however, their work continues with a community based Savings and Credit system. This system can be seen as a type of micro saving and micro loan arrangement. Every day, a Mahila Milan leader goes out to a handful of families in the concerned slum community to collect savings. The families save as many rupees as they can afford each day, and by forming a personal relationship with the Mahila Milan leader, trust is built. The money is eventually used by the family to upgrade their existing housing, or by getting out of dept (SPARC, 2010). The system is growing all the time, and in 2001, 25,000 households were involved in a saving process, and 5,000 in a borrowing process (Mitlin et al., 2001). Normally, savings in a projected slum community starts about six months before start of constructions. This gives families time to bunk up a small capital in an early phase of the project (Purushotham et al., 2011).

A result of the Savings and Credit system is naturally house-building. Most of the times, the money is used in a governmentally subsidized community project (like the JNNURM/RAY "slum-free India" scheme). In such projects, about 50 % is paid by the central government. Further, 38% is paid by the state government, and the remaining 12% is paid by the slum households themselves (Purushotham et al., 2011). Most times the whole settlement is replaced by new homes, but in rare cases the settlement's existing structures are saved and upgraded. Either way, households rarely get an improved house totally free, but have to pay a share of the cost themselves. The savings system helps the individual households to build up the required capital for the investment (Samuel, 2011).

According to Diana Mitlin and Sheela Patel, community members in some SPARC projects do the housing constructions themselves. As savings grow, they learn about issues concerning house-building, and full-size models are developed and discussed within the concerned groups (Mitlin et al., 2001). Sundar Burra, a SPARC consultant at the Mumbai office, explains that NIRMAN (SPARC's non-profit construction company) or an outside constructor are sometimes involved in the construction and functions as

an umbrella under which Mahila Milan workers work as sub-contractors or supervisors. In that way, community oriented construction is performed (Burra, 2011).

Some critical voices of SPARC praise SPARC's early community participation work, but consider their entrance on the housing market a little unfortunate. Maju Varghese from the Mumbai-based NGO YUVA believe SPARC's way of performing the saving schemes as well as the construction part could potentially create a conflict of interest (Varghese, 2011).

SPARC is constantly fundraising to help keeping their activities going. Some donors have however been hesitant about supporting community-directed processes. They prefer to be able to monitor their outputs during implementation, and do not see how a bottom-up approach has the capacity to give poor communities the help they need (Mitlin et al., 2001).

On top of the core activities, the Alliance is working on a lot of additional projects. One is their enumerations and mapping surveys. An important part of a slum rehabilitation process is to truly understand the settlement and its cultural and physical structures. A major reason why governments and municipalities in India are not distributing the urban poor its fair share, is their lacking knowledge about the slums and their residents (SPARC, 2010). In Bangalore, mapping surveys are done using GPS points and an aerial photo (Google Maps). The GPS points and aerial photo are subsequently used to make a GIS (Geographical Information Systems) map of the outlines of slum areas. The map then becomes a tool to prevent slum eviction; a proof that the slum really does exist. Of Bangalore's 543 declared slums, the Alliance has mapped 323. However, according to SPARC members Mr Purushotham and Mr Thomas who are actively working with the mapping surveys, the actual number of slums in Bangalore is more than double the official numbers (Purushotham et al., 2011).

Ever since the infancy of the Alliance, the organizations have tried to stay out of all involvement in party politics. Party politics could potentially bring in additional funding for its activities, but the Alliance's leadership argues that party politics has rarely contributed to efficient policies for the urban poor. By becoming political as a federation, there will also always be an impending risk of corruption sneaking into the organization. They are, however, strongly encouraging individuals within the federation to become

politically involved, and raise issues of the urban poor accordingly (Mitlin et al., 2001). Although the alliance is not fundamentally a political organization, it is hard to be completely apolitical as slum rehabilitation is basically a very political concern. The money for the projects is often coming from governmental bodies, and the Alliance is thus dependent on political decisions even if the organization fundamentally is non-political. In the case of Leprosy Colony, a political Minister of the Parliament (MP) asked SPARC to start up a rehabilitation project in the settlement. Since the directions came from a political person, SPARC's community participation work turned out to be slightly complicated. Parts of the slum community agreed with the MP: s political agenda, while other didn't. Out of principal, some households thus declined to take part in the rehabilitation project. Even if the organization is not political, SPARC then ended up in quite a politically intense project (Choudhury, 2011).

According to SPARC's official website, *learning* is a steady building stone in the Alliance's work. New pilot projects are regularly being on trial, and experiences from earlier projects are meant to push the development of the Alliance's work forward. One progressive pilot project is for example the slum upgrading project in Pune (see the *"Three successful slum rehabilitation schemes in India"* section in CHAPTER 3) where architects developed individual housing models in close cooperation with the community. In 1987, UN had an *International Year of Shelter for the Homeless*. The Alliance then received broad positive attention, and international bonds were tied. As a result, the Alliance managed to arrange exchanges between slum dwellers in different slum settlements across India as well as internationally. This way, slum dwellers can share common problems and solutions (Mitlin et al., 2001). Exchanges between the alliance's workforce and various educational institutions are also high priority, as the spreading of the word and interest on slum rehabilitation is important for the alliances future work (SPARC, 2010).

It is also here this thesis fits into the picture. As student researchers in India we studied the Alliance's work with slum rehabilitation in general, and the rehabilitation of Leprosy Colony in Bangalore in particular. With knowledge drawn from these experiences, we have been able to grasp the complex issues connected to slum rehabilitation in India. Through these understandings, in combination with our backgrounds as landscape architect students, we have been able to draw conclusions and make an alternative upgrading proposal for Leprosy Colony.

SPARC IN BANGALORE

In Bangalore, SPARC is one of a handful major NGOs working with slum rehabilitation, housing and participation issues. All NGOs has, however, their individual approach to the issue. SPARC is primarily planning multi-family homes, and argue single-family homes in slums rehabilitation projects (which are normally extremely dense already) don't leave sufficient quantities of open space, community areas and other types of social amenities (Purushotham et al., 2011). *The Karnataka Slum Clearance Board* in Bangalore takes all decisions about governmental funding of slum rehabilitation projects. When an NGO can present a well thought-out and practicable proposal for rehabilitation of a certain area, they release their funding through the governmental JNNURM/RAY -scheme. This means that a proposal has to be formed by the NGO before they even know if they'll get the funding to build it. This can clearly cause some financial troubles as it is difficult putting too much time and effort into a proposal before knowing whether it will be funded (Choudhury, 2011).
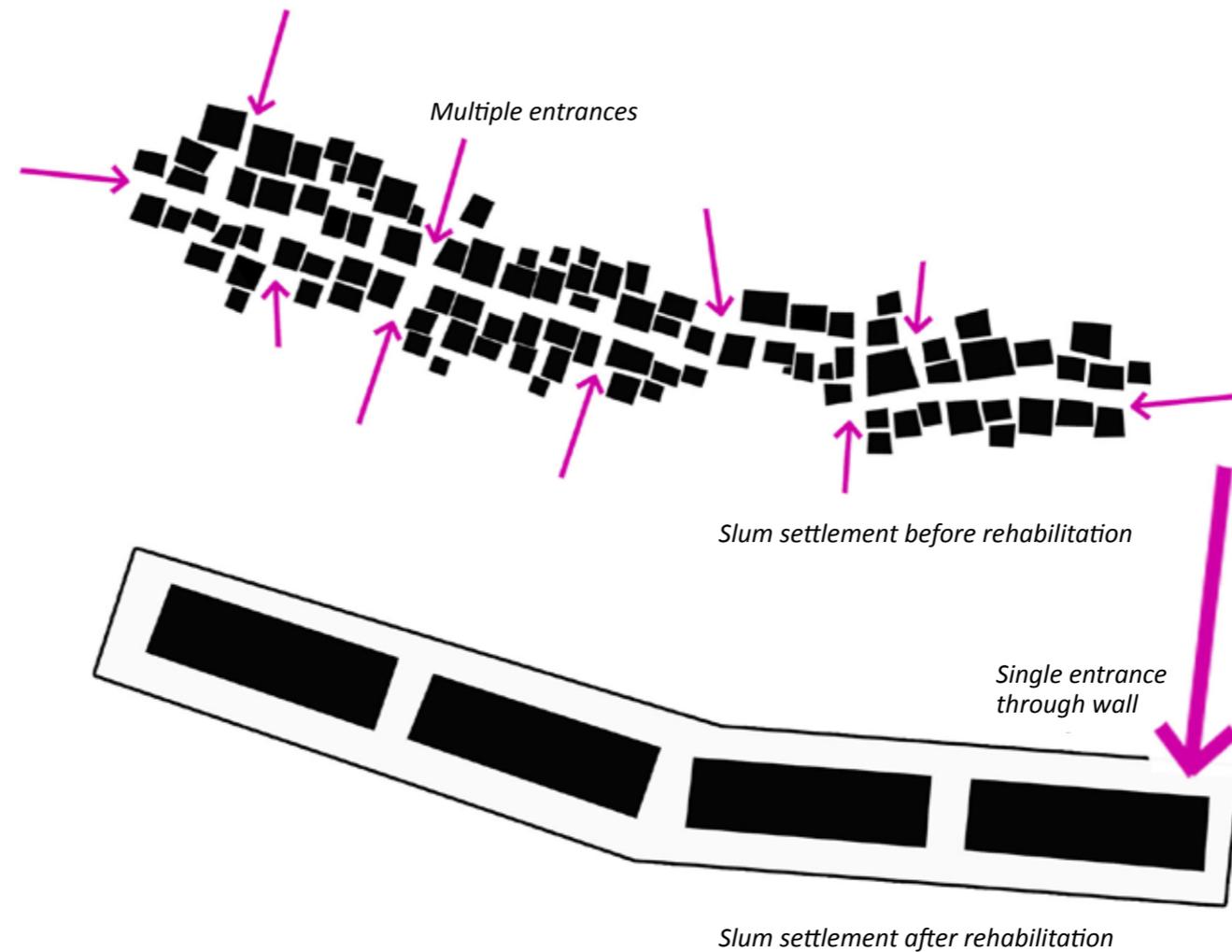
AUSTIN TOWN

– A CRITICAL REVIEW OF A SPARC / MUNICIPAL CORPORATION OF BANGALORE PROJECT

A few years back, the Bangalore section of SPARC in corporation with the Municipal Corporation of Bangalore set up four small projects in Bangalore for, what SPARC describe as, a model for future projects (Samuel, 2011). All the four projects have now been built and are ready for the families to move into. To study these projects is thus in our interest in order to get a picture of what SPARC's work could physically result in. We have looked closely into one settlement; a rehabilitated slum area located in Austin Town in central Bangalore.

In total 86 households used to make up a slum pocket on a small, banana shaped plot in Austin Town. The whole slum settlement was torn down to the ground in 2010 and four four-storey apartment blocks with approximately 20 apartments in each was constructed in its place by the Municipal Corporation of Bangalore. Six months prior to the development, a savings scheme was set up in the community to prepare the dwellers for the investment. An initial action was also the identification of a temporary replacement site close to the slum where the slum dwellers would live while their old homes were demolished, and the new buildings constructed. In the time of writing, all buildings are just about to be finished and ready for its former slum-dwellers to move into. The buildings look nice and clean, and the apartments are reasonably light due to several windows. The fact that it is presented as a model project is however a little surprising since the outdoor spaces and overall planning is poorly though-out.

Firstly, the whole settlement is surrounded by an impermeable concrete wall, which makes the settlement pronouncedly separated from surrounding areas. Since its narrow banana-like shape, the solid wall makes the area feel secluded and locked. Wherever situated in the settlement, the walls are always present, and we found it somewhat odd how a new neighbourhood was given these clearly isolating attributes. Due to SPARC, the walls are there on request from the slum dwellers to prevent possible encroachment by others, and as a respons to neighbours' request of a clear demarcation (Burra, 2011). If a demarcation is strongly requested by the slum dwellers, it could however have been given a more permeable layout to avoid strong enclavisation. By closing off the new area with a sold wall like this, an enclave is effectively shaped in the neighbourhood and accessibility is strongly delimited.

Multiple entrances

Slum settlement before rehabilitation

Single entrance through wall

Slum settlement after rehabilitation

Another concern is the lack of open spaces in close proximity to the apartments. Since the apartments are small (25 m²) for an entire family of several generations, families need external spaces for their daily responsibilities. The narrow gallery corridors attached to the apartments are only about one meter wide, and could hardly function as much more than a drying rack for clothes without clogging the transportation route. For ground floor residents, there is plenty of space by the front door, but families living on the first, second and third floor would have to take a trip downstairs to the ground floor each time they wished to use the open air spaces. When studying various slum areas around Bangalore, we found that most slum dwellers intensely use the external space immediately outside the front door, almost as an extra room. This is where residents do laundry, wash up, create handicrafts, play, socialize and sometimes perform cooking duties. Without these spaces, life becomes much more complicated for the slum dwellers.

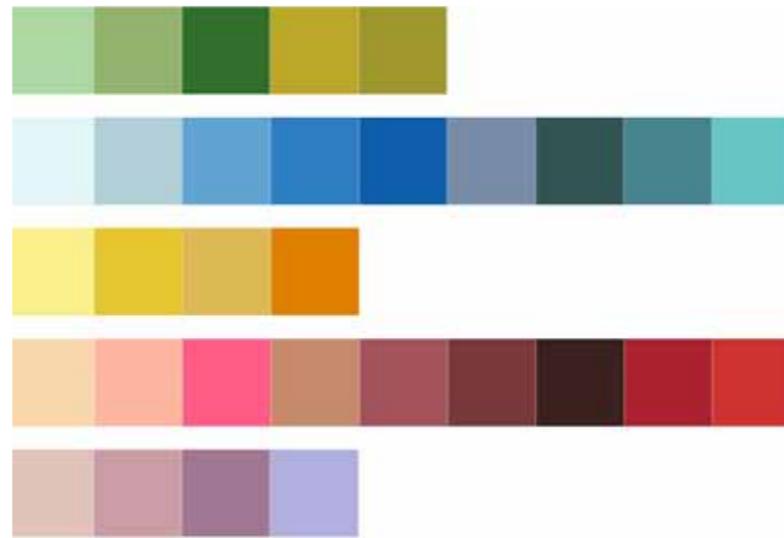Regarding open ground space in the Austin Town settlement, there is a gap between each building. This space could be used as a social spot, as well as a place for work or domestic duties. By leaving the space clear, it encourages the slum dwellers to use it for a variety of uses, including urban farming, kettle husbandry, washing, and playing. No label is put on the spaces, thus opening it up for multi-functional uses which is good. However, without a pronounced hierarchy between these spaces in the layout of the site, there is also no framework for a strong community centre or square. In an area with 86 households, some kind of community centre could add extra value to the neighbourhood, and have the potential of strengthening bonds between people from different apartment blocks.

In the Austin Town settlement there is a standard size of all apartments. If a family is exceptionally large, they are not given a larger apartment, but instead two apartments (Purushotham et al 2011). Most housing project around the world today would offer a variety of apartment sizes and types that reflects the general variety of household sizes. It is generally also cheaper to build homes in different sizes instead of giving large families *two* homes with two sets of bathrooms and kitchens.

The Austin Town settlement is not badly built and its residents will recieve new apartments with facilities they didn't have before. However, we thought it could have been designed better when it comes to the overall planning. We were a little disappointed with the physical outcome and functional framework of the Austin Town settlement, and would not like to see a similar scheme in Leprosy Colony. The Mumbai section of SPARC stress that the NGO did not actually design the rehabilitated area, but that the design and planning was made by the Municipal Corporation of Bangalore (Burra, 2011). However, as the NGO responsable for community mobilization in the settlement, they have the opportunity to raise issues concerning slum dwellers' needs, and lift the voise of the slum dwellers for the Municipal Corporation of Bangalore prior to construction, especially for a project they describe as a model project.

Significant governmental spending (as well as slum dwellers' savings) went into this project, but still lack considerate design and planning. Building blocks of standardized homes like this recall the *Million Homes Programme* in Sweden in the 1960s. At that time there was a severe housing shortage in Sweden and the standard of living was low. Through the Million Homes Programme one million new homes was therefore built between 1965 and 1975 to meet these needs. At the initial phase, standards were raised significantly as poor human-scale housing gave way for new modern large-scale apartment blocks (NE, 2011). To keep costs low, the government constructed large, non-site specific, impersonal, pre-fabricated buildings. In these projects, the apartment sizes were generally standardized and didn't always suit the intended clientele very well. The idea behind the project was a dream of homes for everyone, and none of these housing schemes were intended to become bad or undesirable, but many turned out so in practice. Jon Höjer, one of the architects behind a project in Botkyrka, Stockholm, believes that the problem was that it all happened too fast and that the future residents' needs therefore were forgotten in the process (Nilsson, 2000). When the Swedish economy later was improved, those who could afford to move from these areas did. What remained was the poorer social classes and the new labor immigrants. Today these areas face big problems and costly rehabilitation upgrades due to widespread vacancy, inferior outdoor as well as indoor environment, deficient maintenance, and high crime rates (Ristilammi, 1994). The areas' de-humanized scale and poor coherence with the rest of its cities have appointed them planning failures many times over. Is India prepared to do the same mistake in the wake of their rehabilitation schemes?

46

Resettlement of Austin Town

Color scheme of Leprosy Colony

THE NGO DILEMMA

Slum dwellers' influence in rehabilitation projects are usually limited to specific initiatives and not beyond the project level, outreach from the governance structures (Satterthwaite, 2008). Therefore it is important to emphasize that representative organizations and federations of the urban poor in India play an important role, not only in helping slum dwellers organize themselves and demand change, but also when they take initiatives and offer themselves to government agencies as partners. Non-governmental organizations often achieve successful results because they are locally connected. According to Shirin Madon at the information systems department of London School of Economics and Political Science and Sundeep Sahay at the Department of Informatics at the University of Oslo, these efforts could become more successful if the communication between NGOs and the government was better (Madon et al. 2002). Voices are raised both by donors and some authorities that a greater cooperation between NGOs and the state would be beneficial for future development (Sen, 2002). If the city governance welcomes the co-operation, significant positive change can be achieved. This type of collaboration has, according to David Satterthwaite from the International Institute for Environment and Development (IIED) in the U.K., two positive effects; firstly it encourages slum dwellers to organize themselves and engage with city government agencies, and secondly it helps to change the attitude of politicians towards the poor. As an example of a successful co-operation, a project SPARC was involved in 1999 in Pune ought to be mentioned. Through a partnership between the local government and the organization, a large-scale community toilet block construction program was launched which led to toilets of better design and maintenance than before (Satterthwaite, 2008). For a co-operation like this to

work, the importance of the individuals working within the NGO ought to be highlighted. These may have different motives to be part of the NGOs, and therefore also different attitude towards the state. Then, of course, attitudes of the state itself affect the relationship with NGOs and the state (Sen, 2002).

This has put the NGOs to a difficult balancing act, and some NGOs have been criticized for co-operating with the government too closely nowadays. According to its critics, they are no longer the link between slum dwellers and the government, but the government's right hand. When it comes to SPARC, the previously mentioned Mankhurd resettlement (which SPARC was involved in), could illustrate this (Varghese, 2011). According to planning Professor Ananya Roy, *"SPARC [...] claims credit for the successful resettlement of squatters and slum dwellers. However, recent research indicates that such resettlement was partly dictated by the World Bank as a condition of its loan for Mumbai's urban transportation projects"* (Roy, 2005, p. 154). Thus, projects described as performed by local activism turns out to be conducted through the conditionality of international aid. Nonetheless, Roy states that SPARC still plays a very important role, and that this example rather displays what resources there are available on a global scale, like the World Bank. Roy points out that the World Bank has many shortcomings in accountability and governance, but believes that slum dwellers can use the World Bank as a tool to challenge national and regional governments. For the main problem is, after all, that despite the most well-intended of projects from the very beginning, you cannot escape the fact that they, to be realized, has to undergo a planning system in India, which actually counteracts what it claims on aiming to change. This is a big dilemma for the NGOs operating in India, and they have few other choices than working through, rather than against, the institutions of power (Roy, 2005).

THREE SUCCESSFUL SLUM REHABILITATION SCHEMES IN INDIA
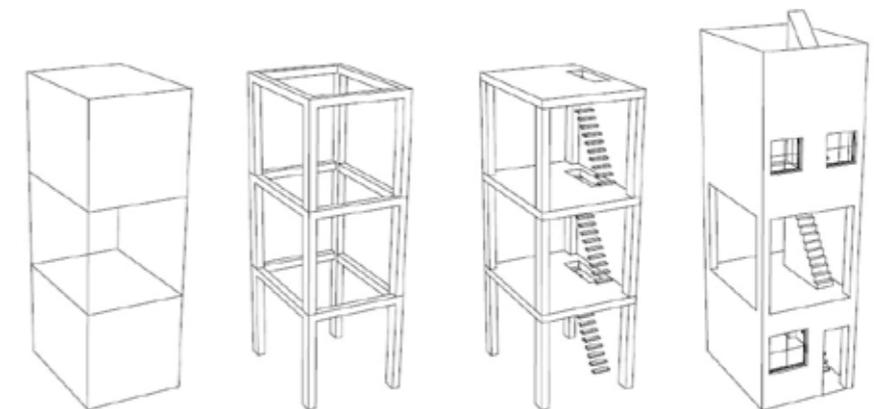

•INDORE

MUMBAI• •PUNE

PUNE SLUM UPGRADING SCHEME

The Bombay Model and different types of standardized high-rise developments are clearly in focus in India, but there are some exceptions. In 2008 SPARC started a progressive project in Pune in cooperation with Swedish and Brazilian architects Sara Göransson and Filipe Balestra from the design firm Urban Nouveau (Mahila Milan et al. unpublished). The take-off point of the project was to find an alternative to the prevailing high-rise rehabilitation method, and to find a model that could be upgraded and extended gradually. The impermanent homes were proposed to be demolished and new individual houses were proposed in its place. An incremental housing model of a three-storey individual house was developed in cooperation with the slum community, and the buildings were eventually also to be built by the residents themselves. The houses could be joined together with other houses and thus become cheaper as some physical structures were shared. This project was quite outstanding in India when it was presented; slum upgrading had simply not been done this way before, and the lessons learned from this project are valuable assets for future work on slum upgrading (Mahila Milan et al. unpublished). The project was also rather successful, and even though there hasn't been many similar projects, the lessons learned from this project are valuable assets for future work on slum upgrading (Farrow, 2010).

LEPROSY COLONY, MUMBAI

Another example of a successful slum upgrading project is a leprosy colony in northern Mumbai. The small colony has today about 150 inhabitants of whom 50 suffer from passive leprosy (i.e. they no longer bear the disease, but are burdened with disabilities from former illnesses) (Ganapati, 2011). The colony was formed by a group of ostracized leprosy patients on mainly municipal land in 1960 by their own initiative, and with some seed money. Initially they earned money though illicit distillation of liquor with supplying outside the colony, but this was stopped by the government some years back. Today many residents have other jobs, and some residents are even working for Bombay Leprosy Project (BLP), an Mumbai based NGO which has been supporting the colony from the start (Ganapati, 2011).

The leprosy slum has gone through an upgrading process lately which, organically and humbly, has upgraded the settlement to a thriving and beautiful neighbourhood. The slum upgrading process has been possible mainly through savings from the residents themselves, and no construction workers or designers have been involved in the process (Ganapati, 2011). As a pure slum upgrading project, structures have been improved in-situ and almost no new houses have been added except a large public toilet building, which is kept clean and hygienic by the residents. A school with a large yard is situated in the middle of the colony, which functions as a central node, and a place for both communal celebrations and play. A beautiful Hindu temple is also to be found in the settlement, which keeps up a spotless facade from a daily cleaning ritual.

The whole settlement showcases a very pleasant, clean and friendly atmosphere, and it is clear that the residents are proud of their homes and care for their environment. No garbage is thrown in the alleys, and the streets are neatly swept. The degree of education among the younger generation seems to be fairly high too; during our short stay in the settlement we come upon a female medicine student and also a father who had sent his son to university in the U.K.. The colony shows a brilliant example of slum dwellers' own ability to upgrade their living and construct their own houses. Clearly, the residents of Mumbai Leprosy Colony had the ability to save money for such an upgrading process, which is not the case with all slum dwellers, but it still eradicates many prejudices about the inability of slum dwellers to build sustainable and permanent structures. Leprosy Colony is a small slum connected to a larger slum settlement, and the minor size of the community was probably of great benefit for people to organize themselves in performing such a comprehensive communal upgrading.

Pune rehabilitation scheme (Pictures by SPARC)

Leprosy colony, Mumbai.

SLUM NETWORKING, INDORE

A third example worth mentioning is "Slum Networking", developed by engineer Himashu Parikh in 1987 for Indore in India, and later applied in villages all over the country. This project takes its starting point in the fact that slums often are located in the lowest points of the city and thus can take advantage of already existing natural drainage channels. The focus is therefore on building an effective system for water and sewage. For this to be made possible, the streets get new improved street paving that can take care of storm water. Research has shown that after an initial cost of RS 4,000 from the slum dwellers themselves on infrastructure (the total cost per household is RS 12,000) each household then has spent an additional RS 60,000 on improving their house. The initial improvements have thus worked as such great incentives that the inhabitants have invested significantly in their living. What makes this project particularly interesting is that it illuminates how rehabilitation of slum areas may be important for the city as a whole, by making the new drainage channels in the former slum larger than necessary they become buffer zones for surrounding areas, thus improving infrastructure for the city in whole. At the same time, the rehabilitated areas have turned into important public green spaces (Cumberlidge et al. 2007).

The opinions on incremental slum upgrading projects, like the three previous, have however not been exclusively positive. Mukesh Metha, the architect and mastermind behind the development plans for Dharavi, is turning against this way of handling slum areas. He thinks upgrading a slum area marginally improves people's lives, and he argues upgrading is like an artificial respiration for the slum area which maintains the social segregation. He presents instead another way of handling slum rehabilitation. In Metha's proposal for Dharavi, the city area will be completely transformed into a multi-billion dollar neighbourhood of skyscrapers and elevated walkways. Slum dwellers that can prove they have lived in Dharavi since 2000 will be given a new apartment for free, which they are hindered by law to sell for 10 years to avoid speculation. He argues this new neighbourhood will be attractive for a large range of people, not purely for the poor. In slum upgrading projects, areas remain poor and unattractive, and thus segregated, he thinks. The new Dharavi will instead be a mixed and integrated area, which is a more sustainable approach in a city-wide perspective (Metha, 2011). Metha's proposal is expected to be realized through a cross-subsidized deal where parts of the area are sold off to private investors to build accommodation and business buildings for free sale on the market. Since Dharavi is located in the heart of Mumbai, the land is so valuable that the companies are said to gladly pay for the slum dwellers' homes in order to get a part of the plot. This way of handing over slum planning from the government to private investors, is a flourishing way of solving social housing, it is argued. A similar proposal has been released recently for the collapsed slum in Ejipura, Bangalore. Potentially, this new approach of slum rehabilitation could be profitable for everyone involved; the slum dwellers receive a house for free, the government don't have to pay for it, and the private investors attains prime land in a central urban area. However, since this approach only is possible in a central location of a large city where land is scarce and thus land values high, shouldn't the issue of (un)equal land distribution come without fail with such a proposal? Is it really right to take a considerable part of an already dense slum area and turn it into private investment, and leave only a fraction to the slum dwellers to inhabit in high-rise towers?

In Metha's proposal, the fact that only families that can prove they lived in Dharavi since 2000 will get an apartment, means nearly 40% of the inhabitants of Dharavi will be made homeless (Metha, 2011). For them, the redevelopment is clearly not a very good arrangement. A fairer deal would be to transform every physical hut into a new apartment, but since a large part of Dharavi will be turned into a business area, there is a risk that this would create a very dense rehabilitated slum area, not desired by anyone. Since Dharavi is exceptionally dense as it is, the new residential development is taking shape as a Singapore-inspired city district of 15 to 35 storeys, even without those 40% of Dharavi's inhabitants.

One of Metha's arguments for his proposal is that his new Dharavi will be attractive for a wider range of people, and thus combat city-wide segregation. Obviously this is an important argument, and an aim which should be a key issue in all urban planning. If his way of doing it by partly selling off the territory to profitable companies and creating dense high-rise housing really is a good solution, could however be questioned. It's hard to see why an organically rehabilitated slum area couldn't become a successful and satisfying neighbourhood, which in the long term would attract higher-income groups as well. Partly, it seems to come down to the idea that high rise buildings and shiny facades is what high-income people want, and what is generally considered good in India. In western cultures like Sweden, a planning ideal of "mish-mash" neighbourhoods, more like an organic slum area, are instead favoured (both by lower and higher income groups). Dense neighbourhoods like the exhibition site of Bo01 in Malmö (Malmö Stad, 2009) or Hammarby Sjöstad in Stockholm (Hammarby Sjöstad, 2011) are designed with variety, density, human scale and ecological sustainability as catchwords. These areas are to show a wide diversity in apartment size, apartment type, tender status, building height and street width to attract a wide variety of people from various social groups. Although the mix of income groups in practice can be criticized, it still shows an aim to create a varied and stimulating environment, and a streetscape with a mixture of colours, shapes and materials. Even though the upscale Bo01 development hardly can be compared to the slum development of Leprosy Colony in Bangalore, there are however some interesting parallels to pay attention to. Many of the qualities in Bo01 can already be found in the existing settlement of Leprosy Colony; the diversity in house size, house height and the mixture of colours and materials are there. The narrow streets, local materials, small-scale neighbourhood common areas and pedestrian-oriented streets are too. The eco-friendliness of recycling and resource efficiency is also evident, although the means and reasons for their efficiency are fundamentally different. The ecological footprints of those living in Bo01 will however never be, even remotely, as small as those in Leprosy Colony.

Who says India is not going in the same direction as Sweden, and will eventually favour these organically planned neighbourhoods to the large-scale dehumanized Singapore-style developments, just like Sweden has? Why does a sensitively upgraded slum settlement have to remain poor and unattractive?

04 DISCUSSION:
WHY DOES SLUM REHABILITATION IN INDIA FAIL?

From what we have observed during our field work in India and through our literature analysis, slum rehabilitation in India is not working ultimately. If there was a simple answer to why this is the case, the issues would probably be solved already. Instead, the complications of slum rehabilitation in India are complex and multifaceted. Many of the concerns, like the widespread corruption problem, are deeply rooted in the system and sometimes hard to detect and alter. There are however some problems that should be highlighted in order to understand why former slum rehabilitation projects have turned out like they have, and to see what problems have to be overcome in order to create sustainable Indian cities in the future.

A LACK OF COHESIVENESS AND CONTEXT

SPARC is one of India's largest NGOs, and a well-respected and frequently engaged organization. SPARC's strength is in the mobilization phase and they make huge difference for slum-dwellers in form of micro-saving programmes and communal participation schemes. However, there is a significant gap between initial community work and the physical end result (often constructed by State agencies or municipalities) which often seem to be too dependent on popular thinking about house types and urban planning. SPARC's intentions are, from what we have experienced during our field work and seen in their publications, unmistakable good, but this sometimes appears not to be enough for the final creation of sustainable rehabilitated neighbourhoods. SPARC were for example involved in the Mankhurd resettlement project as a community based organization working with participation and mobilization, which turned out to be quite an unsuccessful rehabilitation area (see CHAPTER 3). They did valuable work with the displaced communities in terms of helping them with savings and acclimatisation to the new neighbourhood to some extent. Without their work, the state of people's lives would probably be much worse than it is now. However, they let the planning and design of the community take shape in a socially and economically unsuccessful way, with dissatisfied replaced slum dwellers as a result (YUVA, 2008). They did not design the new buildings and could thus not be hold guilty for the design, but as the NGO working with the slum communities, they could

use their power and voice of the slum dwellers to push the State performed construction in other directions. In the end, their great foundation work ended up in an unsatisfying project. And what is the good community participation work really worth if the outcome is as socially unsustainable as Mankhurd? Once again, projects fail in the lack of continuity and whole-embracing scale. Great planning rarely comes without thoughtful underlying analyzes of contexts, social networks, functions and needs for a specific community. Neither does thoughtful social processes and deep analyzes lead to a great planning if the valuable knowledge from the community participation process is simply not taken into consideration in the design.

Just like the lack of cohesiveness within specific projects, there's also a lack of focus on the larger picture, the urban context, in many slum rehabilitation schemes in India. Sometimes it seems like the planning is made through a magnifying glass, without relating to a zoomed out city-scale view. Both Austin Town and Mankhurd are examples of this, but in completely different scales. In the case of Mankhurd there's a clear city-wide segregation problem. Looking at the city as a whole, it can be considered rather inconsiderate to collect and concentrate low-income groups, previously dispersed all over the city, into one isolated area. One can wonder what kind of segregated city this planning approach creates in the long run, and if that really is a desirable future. Austin Town is segregated too, but in the neighbourhood scale instead of the city-wide scale. In order not to create a new social enclave in the middle of the city, one could have hoped for a rehabilitated area of greater connectivity with its neighbouring areas, and a building scale that merge into the existing city fabric. This was however not done, but instead a walled-in area of large-scale multi-storey buildings was created – clearly separating the new area from its surrounding.

THE "PRE-FAB" WAY

There's a strong custom of top-down governmental steering in the slum rehabilitation processes in India, which have resulted in many deficient projects, like the one in Eijipura. Through the idea of the state as a provider rather than an enabler, projects without concern for existing physical and social structures, and with pre-fabricated designs, are unfolding throughout the country. In many of these schemes there's a lack of site-specific

In the slum rehabilitation site of Mankhurd, far out from Mumbai city centre, tens of thousands of people were grouped in grave poverty.

and community-specific analyzes done prior to the development, which have resulted in new settlements, suitable neither for the specific urban context nor the specific community group. It might also have contributed to a cementation of an image of what slum rehabilitation look like, and stiffened the minds of planners and NGOs into believing the high-rise model is the only alternative. There seems to be a strong habit in building straight forward, uncomplicated housing schemes that aims to gives people what they need, which for example could be defined as a 25m^2 floor space, water and sewage, electricity and security of tenure. Other values that are important in the build-up of a sustainable community, such as opportunities to support oneself, a sense of community, physical as well as social connections to the surrounding urban fabric and recreational space are commonly overlooked. Korean planner Gill-Chin Lim also sees a problem in how many housing projects assume all slum dwellers prefer unique occupancy, meaning that each household must have a single dwelling unit. An empirical study from Korea indicates the opposite; *"as income grows, individuals spend more to enjoy their physical space than to move to separate occupancy dwellings"* (Lim, 1987, p.182). Basically, people may prefer more space shared with others, however slum rehabilitation today, with some rare exceptions, has no built in flexibility to allow for these variations (Lim, 1987).

When the "demolish old - build high-rise" model is the only prevailing, there's also a problem in the participation process. When the only thing people have seen in terms of slum rehabilitation schemes are the high-rise, concrete blocks, it's hard for them to have a reasonable argumentation about what they want and why. They simply cannot see the alternatives. This result in slum-dwellers saying ok to presented plans, and NGOs and governments can declare that the slum-dwellers were involved and "wanted this" when projects fail and no-one wants to take the blame. Projects like the EWS in Eijipura have also stirred resentment among slum-dwellers on having their homes redone, and has caused a lot of suspicion and offence towards governmentally financed housing schemes (Purushotham et al., 2011). In Bangalore, SPARC have experienced a general unwillingness among slum dweller to let someone else build their house. Instead, they want the money to build it themselves (Purushotham al., 2011). And frankly – who can blame them? If Eijipura is set as an example of how to improve slum dwellers' housing standards, most people would probably back off as rehabilitation projects are offered.

Gill-Chin Lim highlights another problem with the "pre-fab" way. Within the informal housing market, people move through different submarkets to improve their housing situation gradually. This can mean moving to another location or carry out changes of the existing residence. A household can move upward or downward during the transition and sometimes skip some steps. But to move from squatter to the regular housing market in a single step is highly unlikely among the poor. A street dweller, for example, generally does not have the financial resources to enter the regular housing market in such a short time. From this we can conclude that the movement from informal to regular housing normally takes a long time. However, many slum rehabilitation projects attempt to transfer households from slums to the regular housing market in a single step. This fast forward through the steps of housing improvement over time, set impossible financial burdens on the former slum dwellers for maintenance of their new housing etc. Instead, Lim suggests that gradual improvement should be made possible (Lim, 1987).

UNEQUAL LAND DISTRIBUTION

One obstacle in the slum rehabilitation industry in India is that there's a very clear, and deeply rooted, unequal land distribution in Indian cities. Poor people are not prioritized in the planning, and instead of trying to make room for them in the city (just as well as business, high-income communities and malls are being squeezed in) they are being evicted and moved out of the city.

According to planning professor Ananya Roy (2009) almost all planning in India can be considered informal, since it never follows any set of regulations to the letter. Roy uses Delhi as an example, where almost all development taking place violates some planning or building law to the point that most of the development in the city should be seen as illegal. The difference lies in the *type* of illegal activity the government declares illegal and which they formalize. Dr D. Asher Ghertner, a doctoral candidate in the Energy and Resources Group at the University of California, Berkeley, states that development projects that look like "world class" becomes accepted by the government even though it essentially is just as illegal as slums. Roy points out that while it is internationally assumed that modern states

governs planning by mapping, the Indian state accomplish just as much planning by "unmapping" cities. Unmapping means in this case deliberately leaving parts of the land unmapped; thus creating opportunities for illegal developments in these areas. Unmapping gives the possibility of a territorialized flexibility to change land use as needed. Above all, this has been an opportunity for the government to carry out urban and industrial development, which often conflict with their own regulations. Since the state itself uses informality as a tool for planning, Roy considers planning in India to be seen as the relationship between the published plan and unmapped territory. But while unmapping allows the state to distribute land to new land use and owners, it also keeps the land claims alive. Roy concludes by stating that the Indian city's existence is made possible thanks to informality (Roy, 2009).

In Mumbai, 90% of the population inhabits only 10% of the land, and still poor people are losing occupied pieces of land every day (Dahlberg, 2010). The Mumbai-based movement *Save Home Build Home* (SHBH) opposes the prevailing constant threat of eviction in urban slums. They argue that as long as there isn't a fair political dialogue in the field of land distribution, no one should be evicted. But instead of just complaining about the inequalities, they have exposed major land scams and used these as counter argument. The land scams are for example malls built centrally and illegitimately on grounds intended for something else in the detailed plan. They argue the government cannot declare slums wrong if they look through their fingers when malls in a similar manner illegally encroach areas. There's a much larger political acceptance when it comes to an illegal mall popping up in the city than a slum, since it's not associated with poverty and irregularity in the same way as the slum. Instead it beautifully displays a clean and spotless façade, in harmony with the desirable image of the city. The land scams discovered by SHBH have however had a significant impact on the politics of land use in Mumbai, and they even got one minister to resign because of one scam (Singh, 2011).

In Mumbai, 90% of the population inhabits only 10% of the land.

INSTITUTIONAL PLURALISM

In the 1980s, there was a major change in the housing policy in developing countries. Given that most previous governments had worked to rehabilitate slum areas, this kind of work was now criticized with the argument that it required large subsidies and relied too much on government efforts to influence housing markets. Two new themes therefore arose; one that worked for more market-friendly housing policies, and one with the goal to involve the civil society and its institutions, such as non-governmental organizations (NGOs) in the process. The government's role was also modified to make the co-operation between the public and the private sector flourish. The government handed over their institutional monopoly of the poor and their lives to institutional pluralism *"whereby multiple institutions ranging from private firms to community groups, faith-based organizations to political parties, and governmental institutions to NGOs could operate freely pursuing varying strategies to reach the urban poor"* (Sanyal et al. 2001 p. 2). Especially NGOs received a lot of attention in the case of institutional pluralism as they were seen as a key intermediary in the process of housing for the poor among communities and other stakeholders since they neither went the government's or market actor's errands (Sanyal et al.2001). According to Madon and Sahay, NGOs came about as a result of the government's failure to deal with strong pressure from urbanization and as an alternative to formal bureaucratic government institutions. Further, they believe their effectiveness often springs from their work outside the government's bureaucratic framework, not suited for commercial interests and political parties. Their role is to act as slum resident's voice in decision-making, as a mediator between citizens and the state (Madon et al., 2002).

However, in the delivery of housing, *institutional pluralism* affect NGOs effectiveness negatively as conflicts between different interests can arise, such as between private entrepreneurs, NGOs, government agencies and even within the community itself. Although projects are basically well intended from the beginning you cannot get around the fact it creates new assets, often with ambiguous property rights (Sanyal et al. 2001).

An example that clearly shows these concerns is a project executed by SPARC in the slum area of Dharavi, Mumbai. In the late 80s, the government decided that the whole area

of Dharavi would undergo major slum rehabilitation. SPARC opposed the government's early plans for Dharavi where 35,000 of the residents would get new homes, while 20,000 (65,000 according to SPARCs measurements) were forced to evictions. SPARC presented an alternative plan to the government, which they named *People's Plan*, which criticized the plan to have direct private sector involvement, and requested that project beneficiaries should control all decision-making. Later, the government did not have the funds to upgrade the entire Dharavi, instead it was decided that only 12 sub-areas should be reconstructed, and SPARC became involved in the specific area of Markandeya. SPARC started their dialogue process with the slum dwellers to design housing for their needs, which had proved to be successful in a previous project. After a longer period of time their proposal went through with the Municipal Corporation. By late 1989, SPARC succeeded in receiving a "special permission" from the municipal corporation to continue with their designs (Sanyal et al. 2001). However the issue soon arose of whom to pay for the project when SPARC choose to develop the project themselves. After a longer period of financial problems, which at some period of time completely stopped the construction work, unexpectedly, a private contractor with own funds came into the process and promised to complete the project within 18 months. In retrospect, one can assume that the private contractor was aware of forthcoming government plan, the Slum Redevelopment Scheme (SRD). Adopted in 1991, it aimed at encouraging the private sector to participate in the low income housing delivery. All eligible slum dwellers would get a housing unit of 17-21 square meters, and would not pay more than RS 15,000 per household. In exchange, the private contractor was allowed to sell additional units at market price to buyers outside the community, but not with more profit than 25% (Sanyal, 2001). The unique design SPARC had fought so hard for in the beginning of the process could not possibly stay as planned if the private contractor was to get his share of housing to sell. The buildings that were planned as three storeys were to be five stories high instead. In 1995, the law was modified further by the new Slum Rehabilitation Scheme (SRS), which meant even more benefits to private developers by removing the 25% limit and to provide further restrictions as well as the notion of transfer of development rights (TDR), which allowed private developers to partially transfer their development rights from the low-income areas to other parts of the city. In return, the developers were to give free housing to slum dwellers, and make a corpus payment for future maintenance costs of the new housing areas.

At the beginning of 1998, nearly 10 years after the Markandeya project started, the co-operative's members started moving into their newly built units, leaving SPARC both financially and organizationally damaged (Sanyal et al. 2001).

This example illustrates the problems that can arise with institutional pluralism, and how it can damage the processes of local NGOs.
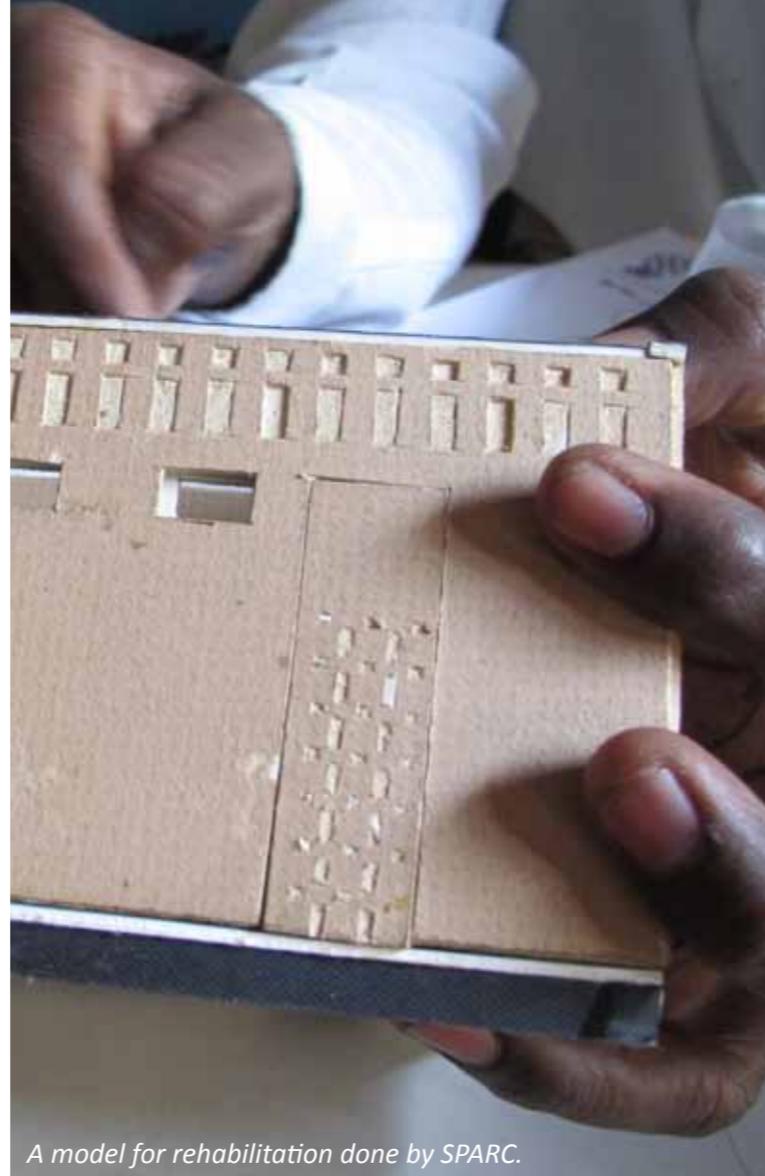
AMBIGUOUS REGULATIONS

The document *Toolkit for Preparation of Detailed Project Report* from the Central Indian Government sets a nationwide framework for how slum rehabilitation in India should be performed. It was issued in 2008 under the JNNURM /RAY "slum- free India" scheme, and the 100 page document drew the outlines of the preparation procedure as well as the design of slum rehabilitation projects (Indian Government, 2008). The scheme is used as a qualification indicator of which projects receive financial aid and which don't. On the whole, the document pinpoints some valuable issues and sets outlines for desirable house types as well as public amenities. The document gives good guidance on a well though-out process of community participation and sustainable long-term thinking. However, it sets rigid standards on some facilities, while leaving many good ideas to the state of *desirable*. These desirable facilities include for example recreational areas and shared community space. When looking at many rehabilitation projects, it is obvious that these desirable facilities (and even some of the vague required facilities) are not prioritized or simply left out. In Austin Town, for example, it's clear that the planning has followed the regulations of a minimum carpet area of 25 m^2 per apartment, while leaving out the requirement of more than 5% green space, and a layout planned for "*social cohesiveness and social interaction*" (Indian Government, 2008 p. 15). In order to set up good regulations on slum rehabilitation, the document would probably need to emphasize these values, as well as the overall planning and outdoor space, more.

As a rigid governmental document it also zooms into some peculiar details, like the *maximum* width of balconies, which could be an obstructer for projects which aim for variety and generous community open air spaces. The document also encourages new rehabilitated slum areas to erect walls around
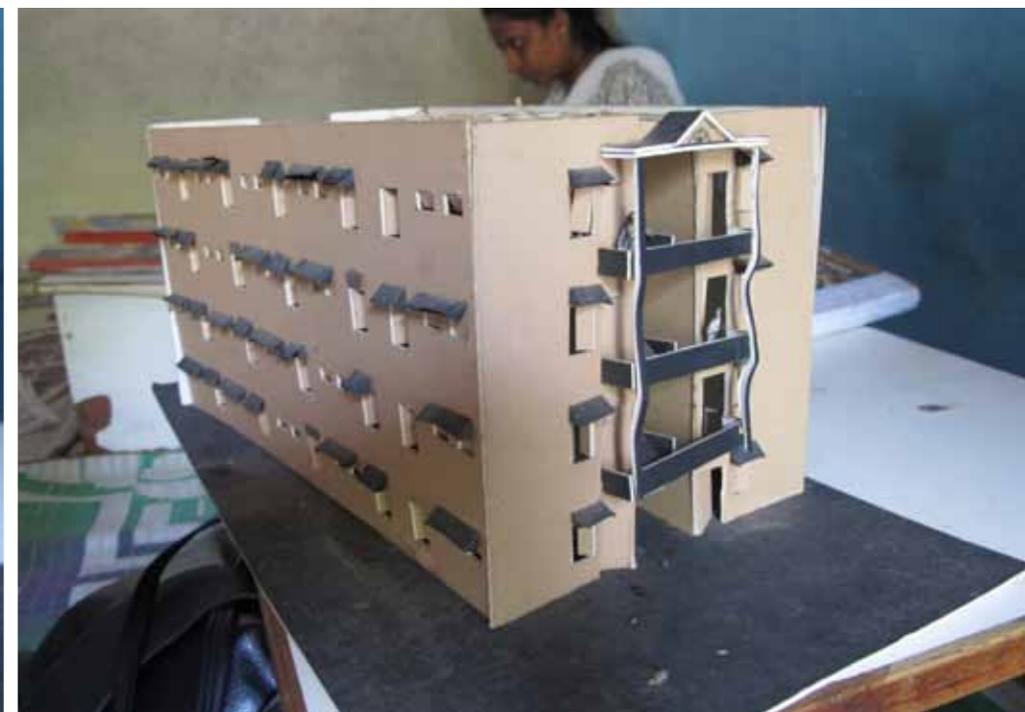
them, which can support a segregated, isolating urban fabric.

Korean planner Gill-Chin Lim sees a problem in governmental minimum physical standards for slum rehabilitation. These are based on what the government thinks are desirable physical structures and not dependent on economic conditions or changes over time. Therefore, there is a serious risk that it instead shuts out many poor groups from the regular housing market as they cannot afford living at the slum rehabilitation site with new costs of living in a high-rise building for a longer period of time. As an alternative, Lim calls for more flexible housing policies in developing countries where appropriate policies are developed for different needs (Lim, 1987).

Many of the criteria that forms the basis for housing policies and shape the housing programs in developing countries originates from developed countries, and are not necessarily adaptable to poor slum areas. For example, the modernist provider model was applied with a certain success in some of the industrialized countries, but was exported uncritically to the developing countries, where the model did not work (Vestbro, 2008).

A model for rehabilitation done by SPARC.

VESTED INTERESTS

One of the key arguments in eviction of slums is often that it is for the "public good". The question to be asked is; for *whose* public good? The public good for the slum dwellers is very seldom taken into consideration. An example of this is a case in Pune where a large number of families in a slum of the city centre were relocated to the outskirts of the city since they were said to contaminate a nearby canal. These families, however, was far from the only ones who contributed to the pollution of the canal, and an installation of suitable provision for sanitation would have been much more effective. What this illustrates is how valuable land is made available, but in particular an anti-poor attitude of the government. This attitude of government officials towards slum dwellers plays an important role in how slum rehabilitation is done. If the slum dwellers are considered obstacles of the development and ought to be removed, this is reflected in government policy of evictions. If they see them as equal citizens with rights and an important part of the city's economy, the slum dwellers often have a greater possibility to influence developments to meet their needs (Satterthwaite, 2008). David Satterthwaite who has conducted case studies in eight different Asian slums, shows that many anti-poor attitudes are based on self-interest. In the case of Pune and the polluted canal, many middle and upper class neighbourhoods simply did not want a slum close to their homes, although they happily relied on the cheap labour and services from the same people (Satterthwaite, 2008).

There is also an attitude among some politicians and officials which is exploitative of slum dwellers. Many city politicians have the slum dwellers' political support because they depend on the politicians to avoid being evicted or receiving/maintaining services. One of the most obvious examples of this is a politician in India who before the election installed provision for water, and then when he was elected removed the water. A local politician in Mumbai even admitted that politicians do not seek to deliver long-term facilities because promises of reparation or renewal are good enough for re-election. According to Satterthwaite, politicians therefore feel threatened by the poor organizing themselves and demanding a more open and authentic relationship with government agencies (Satterthwaite, 2008).

ALL LIGHTS ON DHARAVI AND POTENTIAL VOTE BANKS

Dharavi in Mumbai is Asia's largest slum with its approximate half a million inhabitants. The settlement has been made famous through the movie *Slumdog Millionaire*, and is currently under the magnifier glass of a famous Indian architect, Mukesh Metha, as well as international educational institutions such as Columbia University. The international focus on Dharavi is immense, and the slum has turned into a kind of symbol for urban slum settlements, and a case study for many slum rehabilitation ideas. The local government of Mumbai is working closely with Metha on his extraordinary rehabilitation plans for the settlement, and holds up an attractive image of a government that cares about its poor citizens. In Mumbai this is, according to some critics, quite a problem since it gives the government an excuse to evict slum dwellers in other smaller and less prominent slums (Singh, 2011). While all light is on the multi-billion development of Dharavi, things are going on under the table that don't reach mass-media (Singh, 2011). Austin Town and Leprosy Colony are both very small slums, compared to Dharavi. They are neither large enough to interest media, nor large enough to be influential vote banks for political power. So in the end, there's a risk that not many people of power care much if the end result of the rehabilitation is not exceptional. However, many a mickle makes a muckle, and if this attitude lingers on, it could potentially result in cities with an extensive network of unsustainable rehabilitated slums. This can in turn, quite likely, result in greatly unsustainable and segregated cities. All of this makes the case of Leprosy Colony in Bangalore extra intriguing; how to slum rehabilitate in the small scale? Can the slums become a part of the surrounding urban fabric and can it be done in collaboration with the slum dwellers themselves? Is it possible to implement what Lim request: a more adaptive, phased slum upgrading in this context?

Although it is really fascinating to analyze and try to understand large slum settlements like Dharavi, it is just as challenging to look at the small slum pockets. Those are, after all, what slums in general comprise in India, even if we sometimes are enticed to believe that all slums are as big and interminable like Dharavi.

A small slum on a parking lot in Bangalore, situated in one of the city's most expensive areas.

05 BANGALORE
UNDERSTANDING THE URBAN FABRIC

BANGALORE

Bangalore; India's 'Silicon Valley' and the country's fifth largest city. In comparison to Mumbai, Kolkata and Delhi, Bangalore is considered quite a successful city in terms of slum population; only 2 million of 7,2 million people in Bangalore live in the slum (Davis, 2006). The slum pockets spread across the city are also generally quite small. Bangalore is however expanding fiery in a hap hazardous manner, going steadily towards an urban fabric of segregation and isolation.

DEVELOPMENT

Bangalore, the state capital of Karnataka, is located on the southern part of the Deccan Plateau near the border of two other South Indian states, Tamil Nadu and Andhra Pradesh, and not far from a third, Kerala (Dittrich, 2007). In 1537 Kempe Gowda, a scion of the Yelahanka line of chiefs, (Sudhirta, 2007) built a small mud fort on a spot he found a good location, overlooking a ridged valley in proximity of modern Bangalore. The tiny village that evolved around the fort soon developed into an economic vibrancy, as part of an inland emporium of the Mysore plateau, along with Srirangapatnam and Mysore. Upon the arrival of British forces, most of the economy around Bangalore was confined to textiles production. With the de-industrialization of the British rule it became a mere entrepot for military goods through most of the 19th century, hardly extending its boundaries until the 20th century (Nair, unpublished). After liberation from British rule in 1947 the city took up a growing role as an important commercial and industrial centre for the whole of South India. As a result, the city began to expand according to the needs and convenience of trade and industrial activities (Sastry, 2008).

Today, the former mud fort constitutes the western parts, or "pettah", in one of India's fastest growing cities in the 21st century. Bangalore city has grown spatially more than 10 times its size since 1949 (Sudhirta, 2007) and has a steady population increase of 3.25% annual growth rate, with a population estimated at 10 million in 2021 (Dittrich, 2007). Bangalore has developed into a globally known center for information technology (IT) and Biotechnology (BT) and is even referred to as the 'Silicon Valley of India' (Sudhirta, 2007). Partly overshadowed by this, Bangalore also has numerous of leading commercial and educational institutions and industries like textiles and aviation (Sudhirta, 2007).
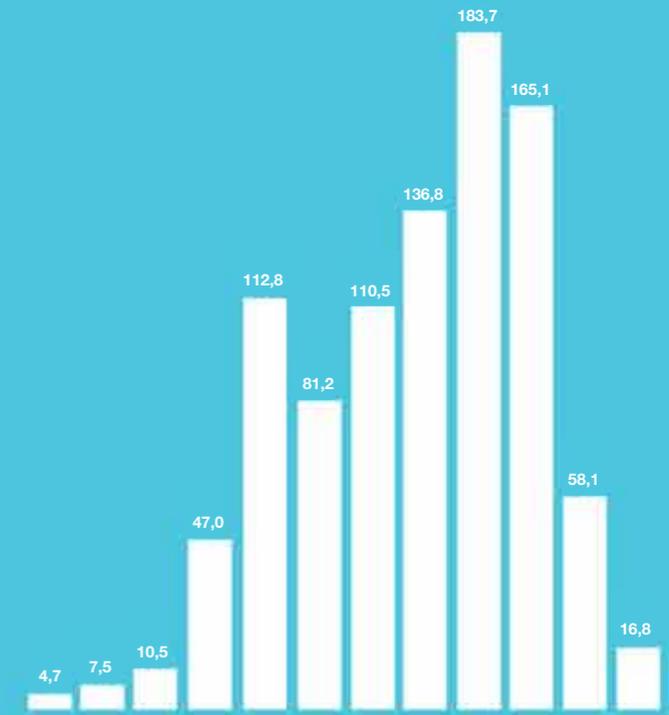
When comparing population density, which is 10,796 persons per km^2 in the case of Bangalore, you find it very close to cities like New York City. But while developed economies like the U.S. are working to control the development of expanding cities, you can see other priorities in Bangalore. This has lead to an unfortunate process of uncontrolled growth that has occurred despite well-developed planning institutions such as Bangalore Development Authority (BDA) and Bangalore Metropolitan Regional Development Authority (BMRDA), *"established by specific acts of legislation by the state to promote the planned growth of the city and its surroundings"* (Sastry, 2008 p.2). What Bangalore has been experiencing, similar to many other cities in the same position, is a lack of planned vision for the future (Sastry, 2008). Meanwhile, both the national and state development policies encourage this rapid development of a large city as an island of development without taking the surroundings into consideration (Sastry, 2008). Bangalore's growth and physical spread has rather been determined by the location of important industries and institutional activities, than by urban planning with a long-term development in mind (Sastry, 2008). Corporate information technology groups have moreover not been late to demand more determined efforts from the government on infrastructure to boost the economic growth (Benjamin, 2000). This has lead to a major focus on acquiring land to promote large corporate residential and work environments and related infrastructure, rather than improving conditions in the city (Benjamin, 2000).

Bangalore International Airport

Bangalore

Leprosy Colony

Bangalore City Railway Station

Central park district

Bangalore University

Hindustan Airport

183,7

165,1

136,8

112,8

110,5

81,2

58,1

47,0

16,8

4,7   7,5   10,5

Rainfall in mm, Jan - Dec (WMO, 2011).

15%

of Bangalore's economy comes
from the IT-sector. 60-70%
comes from the informal sector
(Dittrich, 2007).

949

meters over mean sea level is Bangalore situated (Discover Bangalore, 2010), which is 8 times as high as Berlin, almost twice as high as Santiago, and comparable with Ankara.
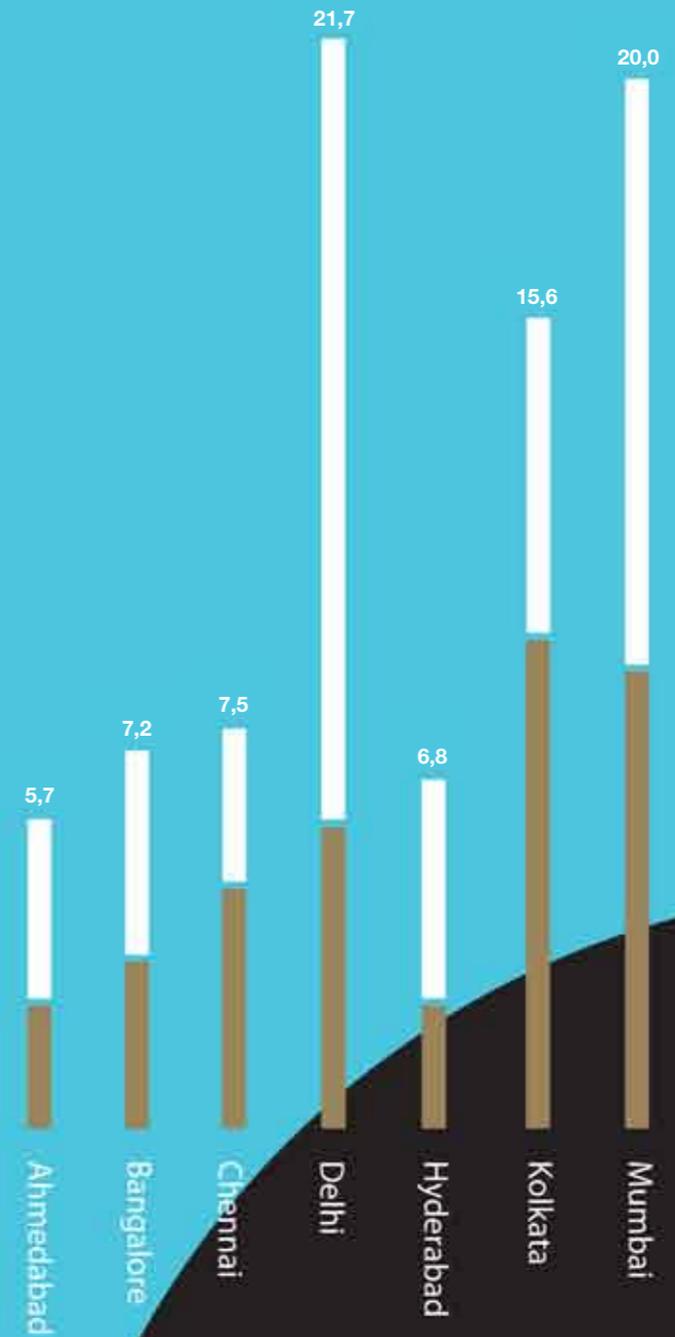
33,9

21,3

15,1

26,2

Min and max temperatures in °C Jan - Dec (WMO, 2011)

KANNADA

is Bangalore's local language, and the state language of Karnataka. Kannada is spoken in its various dialects by roughly 45 million people worldwide (Discover Bangalore, 2010)

EXPORTS

apart from a thriving IT and biotechnology industry, Bangalore is also a leader in exports of textiles (especially silk), sandalwood, incense sticks and granite (Discover Bangalore, 2010)

5,7 Ahmedabad

7,2 Bangalore

7,5 Chennai

21,7 Delhi

6,8 Hyderabad

15,6 Kolkata

20,0 Mumbai

Population in millions of Bangalore and India's other 6 largest cities; today and 1980 (UN, 2007)

BEING 'BANGALORED'

"...people who have been laid off from a multinational because their job has been moved to India — a business practice designed to save money that is arousing passions in some countries, especially Britain and the United States. Bangalore is cited in particular because of its reputation in the USA as a high-tech city, the Indian equivalent of Silicon Valley, that has benefited significantly from such outsourcing." (world Wide Words, 2010)

Bangalore 1949

COLONIAL RULE

The old Indian city of Bangalore continued the medieval tradition of high-density, mixed-use neighborhoods with temple squares and markets forming nodes and open spaces in the otherwise close-knit urban fabric. The city was an organic structure with narrow streets and diverse neighborhoods (Vagale, 2004). The streets functioned as channels of communication and interaction, which held the city together and opened up into squares, as nodes with landmarks overlooking them, like a temple or a market. The city itself was divided into districts based on trade and caste, each having a unique character. The old Indian city also had a clear edge, which differentiated the high-density city from the countryside and hence was clearly legible (Vagale, 2004).

When the British arrived they established a new town next to the old Indian city, where a wide strip of land separated the native town and the colonial city (Vagale, 2004). The new British city was concentrated around a cantonment, and adopted the cantonment type urban form which was the antithesis of the Indian city. In contrast with the narrow meandering streets of the pettah, the cantonment developed on the tower in space model of urban development with wide tree-lined avenues and spacious bungalows (Vagale, 2004). The whole city was interspersed by parks and lakes, which formed nodes throughout. The mall, parade ground and park were some of the public spaces found in the colonial city (Vagale, 2004).

In Europe, the concept of public derives from the ancient Greek name for place for assembly, the *Agora*, and thus developed in a geographically and culturally narrow area (Glover, 2008). When Europe later was urbanized, it became important to define the urban properties and it gave rise to the formation of new municipal institutions. So with the British colonization of India the public space most certainly also became affected. Of course, the public sphere had existed in India long before that, and was to a large extent very similar to the British ones. In India, the public space developed around the so-called "*Chaupal*", a common location, usually designed as a scene around a Banyan tree. The chaupal was the hub of community life in villages and served as a platform to discuss important issues as well as a place for celebrations (Dudley, 2010). What the British brought in was not a physical transformation of the public spaces, instead they gave them the name *public*, and therefore the rules of what could take place

in them were drafted. With the so-called Municipal Committee formed in 1862, laws and norms that once was established in the U.K. was carried over to the legal governing of urban space in India (Glover, 2008). *"The urban reforms in colonial India show radical changes in the way the city was conceived, not always the way they looked"* (Glover, 2008 p. 213).

Even more striking than the physical differences was the linguistic and cultural differences between the two cities; the old mud fort and the British colonial town. In the colonial town lived mostly Brits and other Westerners carrying out businesses, while in the old Indian town Indians lived under civic control (Pandurangan, 2009). The British city also attracted a large number of devotees from Tamil-speaking areas of neighboring Madras Presidency. The previously limited presence of the Kannada language changed dramatically when the city grew by 100 percent during 1941-1951 (Nair, unpublished).

Two years after the 1947 independence, in 1949, the old Indian and colonial cities merged into one (Vagale, 2004). The contrast between the high-density, compact Indian city and the low-density sprawl of the colonial city was unmistakable (Vagale, 2004). There is still today evidence of its divided past with two densely populated commercial areas served by their own bus and train depots as well as two main markets (Pandurangan, 2009). The colonial city has become a financial district where the colonial main street has evolved into entertainment and commercial areas (Vagale, 2004). The old Indian city has, on the other hand, remained an important production and commercial center (Nair, unpublished).
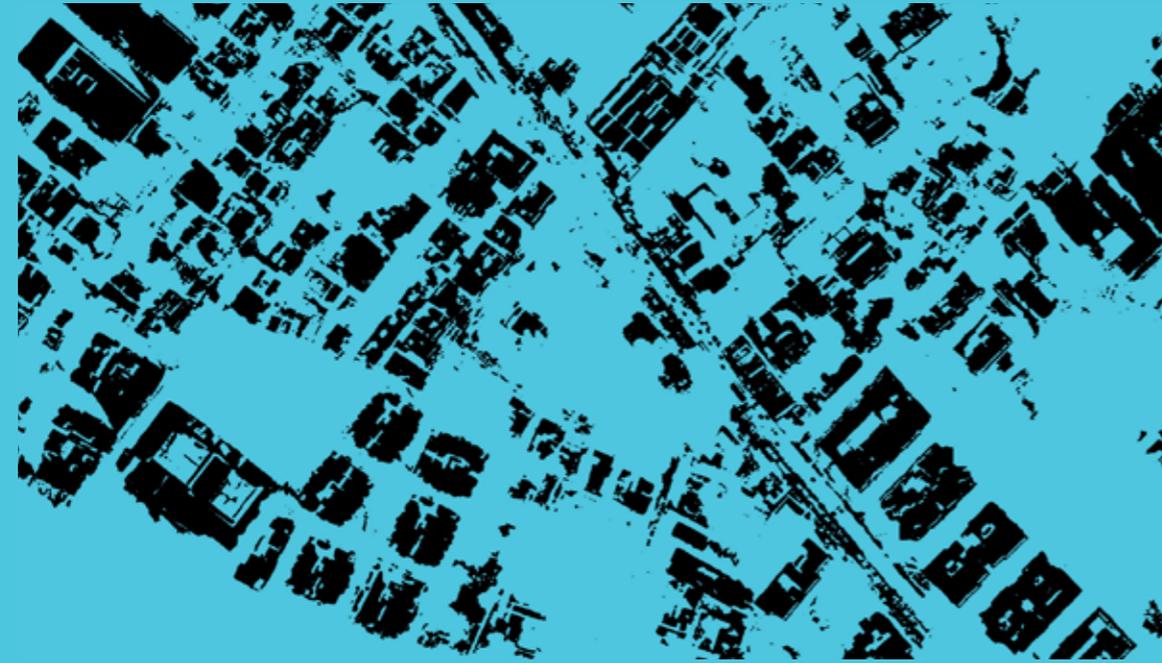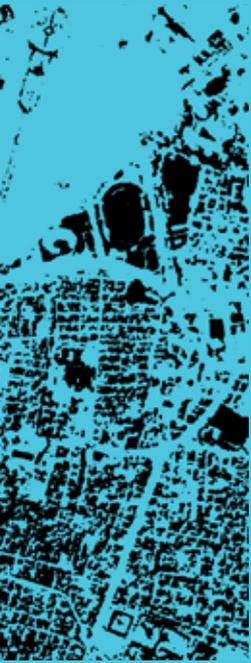
As a conclusion one could say that ever since Bangalore was founded, it has developed with dual characteristics and therefore attracted different categories of people from different regions. In the past this happened because of its importance as a specialized center for trade, later with the British rule and today with commerce and industry as global hub for information technology and biotechnology (Sastry, 2008).

Chickpete, old Bangalore.

Chickpete

Racecourse Road, colonial Bangalore.

After the independence in 1947, India imposed a Soviet-inspired centrally planned economy with heavy emphasis on the sanctity of life in the village and the principle of self-reliance. With the opening of the Indian economy in 1991 drastic neoliberal reconstruction of the economy took place and deeply affected the society. Liberalization also altered the spatial layout of the industries in India, which began to move away from the patterns previously established by the government against industry-specific hubs in order to streamline the economy. Together with the high-tech boom, Bangalore's GDP grew by 6 percent in the 1990's. However, side by side with growing stock exchange listings grew the poverty. During the boom, India got a large number of new millionaires compared to the addition an even larger number of poor during the same period of time. Jeremy Seabrock, author and journalist specializing in social, environmental and development issues, believe the early 1990's was the worst years for poverty in India since independence. As an example, he points out the liberalization of grain prices that increased the prize by 58 percent between 1991 and 1994 (Davis, 2006).

The growth in the footpaths of the boom has followed a skewed pattern in which huge investments have been made in the IT sector, while agriculture has stagnated together with the infrastructure. And while the neoliberal Janata government has financed itself through privatization of state industries instead of taxing the new millionaires, farmers are left with no other choice than moving to slums in the outskirts of cities like Bangalore. At the turn of the millennium, India and thus also Bangalore's neo-liberal bubble burst. Although the IT industry continued to develop (and still does), the other sectors were struggling, especially the public (Davis, 2006). Slum dwellers in Bangalore have grown twice as fast as the total population, and there are today more ragpickers and street children (90 000) than computer geeks (60 000) in the city. A leading Western economic consultant was forced to admit that *"Bangalore's high-tech boom is a drop in an ocean of poverty"* (Davis, 2006 p. 191).

REAL ESTATE BOOM

In the late 1980s to mid 1990s, India's two largest cities, Mumbai and Delhi, showed its interest in Bangalore's real estate market for the first time. With their investments, the colonial bungalows where converted into multi-storey apartments blocks, mainly targeted for investment by high-income groups from other metropolitan areas for future resale. This changed the central parts of Bangalore drastically, with new high-rise glass buildings and international banks. The state government's investment in several new mega-development projects such as sports stadiums and exclusive mass housing led to the demolition of poor settlements in the city center, and relocation in the city's periphery instead. Meanwhile the estate boom increased land prices highly in the central region and forced the poor and medium income households to seek housing and work in more remote locations (Benjamin, 2000). However, the city's periphery has also undergone major transformations. In the 1980s it was a place for low and middle-income earners and small-scale enterprises with poor infrastructure and service. However, in the early 1990s, the southern periphery of Bangalore became the place for exclusive farmhouse clusters and apartment blocks (Benjamin, 2000).

When India's economy was liberalized in 1991, this opened up for new political processes which had an impact on the urban management by especially increasing pressure on large-scale development of infrastructure. In Bangalore's case, it led to the establishment of the *Karnataka Urban Infrastructure Development and Finance Corporation* (KUIDFC) by Karnataka Government in 1993, to channel institutional finance for large infrastructure projects (Benjamin, 2000).

Meanwhile, a new urban middle class of the computer elite and freelance workers emerged. These, who constitute 10 to 15 percent of the population dream of a lifestyle similar to that in the West. That's exactly why Bangalore is well known for the re-creation of lifestyles taken from American suburbs like Palo Alto and Sunny Valley. According to the planner Solomon Benjamin, the wealthy emigrants, officially non-resident Indians, live their lives here as if they were in California (Davis, 2006). However, they have a very diverse socio-economic background and completely different self-interest, resulting in conflicts over valuable land, of the best private colleges and the most coveted jobs in the modern service sector. According to Christoph Dittrich, a geographer at Freiburg University, this leads to ruthless competition *"many of the lower middle-class families are doomed to economic failure, which leads to tendencies of political radicalization. This trend of social fragmentation catalyses urban conflicts that find expression in an increasing number of crimes and communal clashes and in violent conflicts between the supporters and opponents of the globalization project"* (Dittrich, 2007, p.55).

UB city, the very centre of former colonial Bangalore.

"GREATER BANGALORE"

EXCLUSIONARY GEOGRAPHY

Master planning in Bangalore has, of course, a significant impact on the structure of the city. Politicians and the elite are usually of the same class and socialize in the same circles, and richer groups are thus much closer to the decision makers than the poor. It is therefore not surprising that many of the decisions taken in the various planning processes reflect the interests of higher income groups. Christoph Dittrich describes the small conservative and competing elite at the top of the city's socio-economic pyramid as a mixture of two resident Hindu caste groups (Vokkaliga and Lingayat), of local Brahmin, resident Anglo-Indians (mostly followers of the Roman Catholic Church) and of some well-off business families of Muslim faith. These hold by tradition the most important political and economic positions. But the new rising service elite closely tied to foreign investors also want their piece of the pie leading to increasing conflicts over resources and power (Dittrich, 2007).

In spite of its independence, India continued in the colonial pattern of urban exclusion and social discrimination (Benjamin, 2000). This exclusionary geography denies the poor a place in the civic life, and they are looked upon as an obstacle to progress in the social development (Davis, 2006). The absence of representatives from the local level makes it then impossible for lower income earners to influence the development.

MEGA PROJECTS

There are two main fronts were the poor are outcompeted by those with higher income, the first is over central parts of the city where there is already good infrastructure and, consequently, greater economic productivity. The other is over public investments, mainly in infrastructure and services that in turn generates higher land prices and strengthens the company's productivity. So while small businesses in local economies seek to upgrade a road via the municipal process and thereby increase economic productivity, richer groups seek public investments, via the development authority, on getting large land areas and better infrastructure in key urban locations (Benjamin, 2000). Solomon Benjamin, researcher on issues of urban governance and economies, has studied Bangalore and found that those who

control the overall strategic decision-making lie entirely in the hands of state government and large companies with low liability towards local representatives. The political elite's persistent work to transform Bangalore into a "Singapore" has led to widespread evictions and house demolitions, in particular on small clusters of enterprises at exploitation areas in the city. Through the local plan, the land is then transferred to wealthier interest groups, among those large companies (Davis, 2006).

There is also a lack of coordination between the six core agencies responsible for urban development in the city. This is one of the major causes of the deficiencies found in the city's infrastructure. The result has been that many major companies have moved their businesses to other cities in India that offer what Bangalore lacks. Therefore, the city's elite recently begun to address the city's problems to become more competitive globally. The response has been significant investment in mega-projects, mainly on infrastructure. One example, as a direct response to demands from the industrial sector, is the billion rupees mega-city project with the objective of modernizing Bangalore by urban renewal and city planning. The focus is on constructing flyovers, ring roads, and second grade separators for the provision of fiber optic services in high value industrial areas. A new international airport has recently been constructed at Devanahalli, 30 km north of Bangalore. This was companioned with the construction of a six-lane Devanahalli - Bangalore expressway (Dittrich, 2007).

The promotion and implementation of mega-infrastructural projects has become a trend in both central parts and the urban periphery, and it threatens the local economy clusters across the city (Benjamin, 2000). Mainly on the outer ring, a number of major investment projects can be found that will further escalate prices. In a city like Sarjapur, about 30 km from Bangalore, the price of land has increased ten times. And while the new business parks, commercial complexes and exclusive apartment buildings emerge mainly in the periphery of the city center, government investment to provide the accommodation of the poor has declined (Dittrich, 2007). Of course, investments that support the development of the city can be of benefit for the poor, the problem is when the focus on and awareness of difficult conditions disappear as all the energy is spent on spectacular image-building projects.

A GREATER BANGALORE

Under the name *Greater Bangalore*, the Government of Karnataka has formed a new administrative body for the city to be able to control further urban sprawl. This means that the existing unit of Bangalore Municipal Body (BMP) at 226 km^2 now also will include areas earlier administered by seven city municipal councils at a total of 741 km^2, three times the current BMP area. The goal of the new Greater Bangalore is as follows: *"improvement and coordination of infrastructure development; upgrading of the quality of urban civic services; strengthening the administrative capacity for enforcing various rules and regulations; and optimizing expenditure on establishment"* (Sastry, 2008, p. 8). This can be compared to Delhi which was facing similar problems of explosive population growth and haphazard development in the 1960th. In this case, a comprehensive plan was established in 1962 in which Delhi became part of a larger region with the hope to ease the population pressure, and provide adequate infrastructure for the growing population. However Delhi was growing at such rate that by the late 1990s, despite efforts at planned development, Delhi had 3 million people living in 1,000 slum clusters (Sastry, 2008).

As Bangalore is expanding its administrative area to 741 km^2, the sectors most affected are transport and housing. Given the current poor road network and access to transportation, it is difficult to see how the city will be able to meet consumers increasing travel demand. Suffering most from such an expansion are the peripheral parts of the city. They have long experienced uneven development, and face environmental problems differently from inner cities. They are more akin to rurban characteristics such as a higher concentration of households with large household size, a larger number of illiterates, more uneducated and primary sector workers, higher medical costs in comparison with the city, poor access to drinking water and sanitation facilities, almost no solid waste disposal provision, large number of slums and uneven city-peripheral transport facilities. Meanwhile, Greater Bangalore will raise land values to a new level that will push middle and especially low-income groups farther in the periphery. This in turn might lead to an increased risks of illegal and unauthorized ownership of land, encouraging unplanned growth (Sastry, 2008).

Above: park for the wealthy of Bangalore. Bottom: large scale projects of gated communities outside Bangalore, linked together with highways.

71

Bangalore continues to be a divided city between exclusive glass offices with full service, and dense squatter settlements with poor service. Although there is a higher per capita income within the urban district of Bangalore than in the rest of the state, the number of urban poor has risen together with the number of slum settlements. Rising land prices along with rising living costs have forced the urban poor to slums with inadequate facilities and services (Sudhirta, 2007). In the name of modernization and upgrading, the municipality has demolished many of the illegal slum settlements in the city center, which has forced its inhabitants to move to underdeveloped areas in the urban periphery, far from their source of income. At the same time, the lower and middle classes are becoming increasingly closer to the informal housing market (Dittrich, 2007). According to *Bangalore Mahanagara Palike* (Greater Bangalore Municipal Body) *"the number of households in the urban agglomeration defined as poor was 0.22 million, housing approximately 1.1 million people out of 5.7 million population"* (Sudhirta, 2007, p.385). However some activist groups working in slums and other low-income areas estimate that *"if the non-slum poor were included, more than 40 per cent of the city's population would be defined as poor"* (Benjamin, 2000, p.38). Another good indicator is the availability of water. Currently, nearly a third of the population has little or no access to piped water. If the current growth continues, up to half the city's population risks lack access to piped water (Benjamin, 2000).

One of the largest problems that Bangalore's poor are facing today is the irregularity of their accommodations. Bangalore's slums are, as in most cases, built on what is technically publicly or privately owned land, resulting in few official channels for citizens' complaints and a reduction in social status. Several attempts have been made to regulate land ownership, but these have unfortunately encountered problems. The wealthy citizens of Bangalore do not allow themselves to be affected significantly by the poverty; it is most often seen as a separate universe of Bangalore's growing middle class. Public services can also be scarce in the slums of Bangalore. There are ongoing efforts to enhance this, however slums on private land or railroad ground cannot easily be regulated. Slums in those areas are officially ignored by city departments, and are technically unsuitable for government-provided services (Pandurangan, 2009).

From an economic perspective, however, Bangalore's slums are in far better conditions than similar areas across India. This is largely because there is a silent acceptance of informal sector activities in slum areas, even if it is contrary to the formal regulations (Pandurangan, 2009). The informal economy has flourished as a result of the influx of migrant labor and restrictions to absorb those in the formal economy. The urban informal economy consists of, for example, large parts of the building and transport sector, the catering and craftsmen's trade, the petty trade, home-based fabrication systems and of the wide range of domestic helpers. The informal economy continues to grow as industries in the formal economy are increasingly affected by the increased competition. They then choose to hand over much of the work in the informal manufacturing units. At the same time the increased cost of living is forcing poor families to a larger extent to rely on the informal sector for income. In summary the size of the informal economy is a much bigger employer than the formal sector, amounting to about three-quarters of the urban workforce (Dittrich, 2007). While the IT-based formal sector accounts for 15% of Bangalore's economy, the informal sector contributes by 60-70% (Dittrich, 2007).

Development authorities have naturally a significant affect on existing areas that have been developed outside the master plan. If these areas do not conform to their political or executive interests, they may choose to demolish them even though they often serve as major employment areas for the poor. The non-master planned areas has a tenure richness that makes land available to the poor, and by reducing this diversity it becomes difficult for the poor to access land. Noting the importance of the matter, the State Government has set up a special agency, Karnataka Slum Clearance Board (KSCB) specifically to address the redevelopment of slums in partnership with various stakeholders like the Housing Board, Local Bodies, Water Supply Boards, etc. (Sudhirta, 2007).

The dual characteristics of Bangalore; slum next to glass building in Bangalore's Electronic City
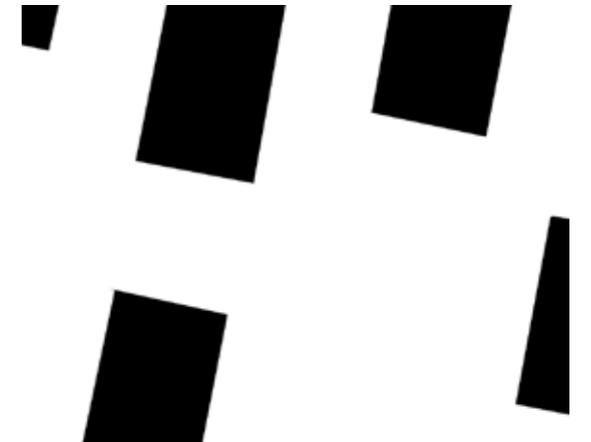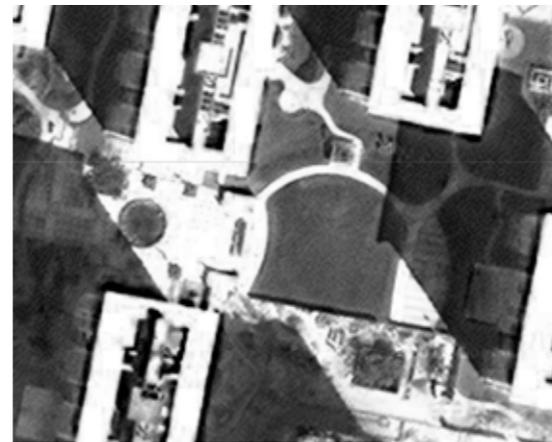
Informal low-income area (slum)

Formal low-income area

Middle-income high-rise towers

High-end housing

The different urban fabrics of Bangalore's social groups

73

A CITY OF ENCLAVES

Bangalore has through history until today been a segregated city. But unlike previously, today's segregation is increasingly built on the fear of the "unknown". The wealthy shut themselves in behind high walls that form islands in the urban landscape strongly inspired by a western lifestyle. Around the slums there are no surveillance cameras, but the social barriers are as effective as barbed wire. The slum is the "unknown" to be afraid of, they are "secret cities" whether they want it or not. These two types of secret cities; the slums forced secrecy and the wealthy's chosen secrecy co-exists in the city, and the paths of its residents seldom cross.

ISLANDS OF WEST

Bangalore is described as the "Silicon Valley" of India and to fit into a picture of success, the city is about to be transformed by models of Western cities (Choudhury, 2003). Like the colonial city, the modern city is built to reflect prosperity. This showcases a city based on social, geographical and economical inequities, which is not built for the needs of society, but for the government, policy makers and the wealthy. This is also clearly reflected in the structure of the city (Malik, 2001). The trend we see taking place in Bangalore today, together with other major cities around the globe in Asia, Europe, South America, Middle East and Africa, is that high-income individuals choose to live in gated communities that offer an *ideal way of life* (Pow, 2009). This often results in tall apartment buildings or blocks of family homes separated from the rest of the urban fabric. They can generally be described as private cities where basic human needs are provided within the enclave. Bangalore now offers accommodation in places with names like *Bel Air* and *Elite*, in large apartments with open plan

arrangement embedded in greenery. Geographer Richard Ballard describes this phenomenon as emigrating to a foreign paradise. He calls it *semigration*, i.e. citizens who choose to remain living in their home country, but in islands of modern western culture (Lemanski et al. 2009) Diana Sheinbaum, teacher at Universidad Nacional Autónoma de México, who has conducted studies on the historical development of gated communities in Mexico City, notes that unlike the historical forms of segregation, today's gated communities are based on the sense of insecurity and a hope of protection from dangerous outsiders (Sheinbaum, 2008). This in turn leads to the establishment of protection devices to restrict access to the gated enclave, such as walls, fences, secured entrances, armed personnel, and surveillance cameras (Lemanski et al. 2009). India is now about to take on the same path as the U.S. and Brazil, where fear of the "other" has resulted in urban and social fragmentation in enclaves (Lemanski et al. 2009). In *City of Panic*, cultural theorist and urbanist Paul Virilio express his worries for the city, and says "Cosmopolis", the open city ideals, are being transformed into "Claustropolis" (Dahlberg, 2010).

Urban researchers define gated communities as residential areas surrounded by walls or fences with secured entrances. Others define gated communities on the basis of their limited public access, where public spaces are privatized (Pow, 2009). The discourse is divided between those who believe that gated communities are the middle-class retreat from the public sphere, leading to harmful social consequences, and those who believe that gated communities are an effective way of organizing public goods, and a new innovative way of relying on private developers on the delivery of public goods and services, instead of traditional local authority housing provision (Pow, 2009). There are also

Gated communities in Bangalore

those who differ on what they call a *perverse segregation* and a more harmless form, in which it is the scale that determines the degree of segregation; the larger the scale the more *perverse* the segregation. According to them, smaller enclaves of gated communities are not perverse but function as semi-open borders between different social groups in the city. They believe this has a positive impact on segregation as the poor receive jobs, more stores and the opportunity to live in a neighbourhood without crime from their new wealthier neighbours (Salcedo et al, 2004).

GATES AND FENCES

However, research shows that gated communities lead to reduced neighbourhood interaction as well as decreased participation of its residents in the public space (Rivadulla, 2007). The exclusionary spaces gated communities creates by closing in behind walls, gives rise to a restriction on freedom of movement, which in turn harms the efficiency of the entire city system (Oluseyi, 2006) and ultimately lead to increased segregation (Lemanski et al. 2009). Psychologists Derek Hook and Michele Vrdoljak strengthens this hypothesis when stating that gated communities distances its residents from the rest of the society so that the residents no longer see any importance of neither civic engagement, nor common national goals of integration (Lemanski et al. 2009). *"Residents tend to be socially similar and are able to function with limited interaction outside their walls, thus implying a homogeneous lifestyle with no (or very limited) contact with the 'difference' that exists in the unknown ether of life beyond the gate. Thus, spatial separation becomes intertwined with social exclusion"* (Lemanski et al. 2009 p.398). P.R. Caldeira, professor of anthropology at the University of California highlights the social distances walls create between the comfortable and

secure inside, and the chaotic and insecure outside (Salcedo et al, 2004). According to Caldeira, the emergence of this defensive architecture is a result of a decline of meetings in public spaces, which previously took place in the streets or on the market (Salcedo et al, 2004). Today these spaces are being privatized in a wish to bring about order, security and control of the public space, to create good conditions for recreation, entertainment and shopping (Landman, 2006). It is precisely these aspects of order, comfort and security middle and upper class groups values the most in the public domain. This means that those who do not fit in these terms are excluded, and thus prevents them from using the public space as they ought to in a democracy. Here it is important to note that public space plays a crucial role in the city. Tibbals goes so far as to say that the public sphere is the most important part of our cities since *"this is where the greatest amount of human contact and interaction takes place"* (Landman, 2006, p. 20).

In a city like Bangalore where the gap between rich and poor is huge, the public sphere therefore plays an extremely important role for increased human interaction (Landman, 2006). According to English geographer Charlotte Lemanski and associate Professor in the Department of Environmental and Geographical Science at University of Cape Town, Sophie Oldfield, the tragedy of the situation is that gated communities not only excludes the dangerous but at the same time increases the fear of the unknown, and therefore also reduces the already lacking integration further. To conclude, gated communities in Bangalore may cater the need for security of the individual, but the collective consequence does after all lead to both spatial and civic fragmentation (Lemanski et al. 2009).

The fragmentation of the city can also be found in other parts than the residential sector. Due to the privatization of public space that is taking place, isolated islands are forming in commerce, industry, supply, services and leisure infrastructure as well. These islands in the city, which are often entirely disconnected from each other by larger distances, are linked together by roads. In Bangalore, we noticed that a new trend is on rise in which private highways, often in the form of flyovers, are being built to link the gated communities with jobs and business centres in the city. Previously, the street served as one of the most important meeting places for various social groups, but when these public streets begin to disappear, so does this source of social connection (Oluseyi, 2006).

Instead another type of segregation is introduced, a vertical segregation, through which wealthier inhabitants can reach their workplace by elevated highways without having to use the congested public roads. Simultaneously the urban road network that initially was created to enable movement of persons, goods and services within the city becomes negatively affected (Oluseyi, 2006). A good example is *Electronic City,* a peri-urban city district in Bangalore which is home to numerous international companies. In the autumn of 2010, a 9 km long four-lane private flyover stood ready for the exclusive use of the employees working in the area. According to the projects website *"you can virtually fly over the ground level traffic congestion between Silk Board Junction and the Electronic City junction on the Elevated Toll Road in just under 10 minutes instead of over one Hour on the congested ground level road during peak hour!"* (Bangalore elevated toolway, 2011).

THE UNSEEN

This clearly illustrates how a new type of city leadership has emerged that no longer looks for the best for all citizens, but rather for economic growth with other aims. In seeking to sell Bangalore as a brand, the reality of traffic congestion, urine and poverty is swept under the rug. The cut-off date of January 1st 1995 that draw the boundary of slum dwellers' right to their land, clearly illustrates this new setting; if you have been living in a slum settlement before January 1st 1995 you are legal, but if you came after this date, you are illegal. As financially stronger, you are obviously always very welcome, no matter what (Choudhury,

2003). To become a part of the global network of cities, a spatial structure strengthening this new image is being introduced. The goal is to:

- *Spatially accommodate global processes and establish linkages with high standards of connectivity,*

- *Create growth structures which allow for future globalising of the city,*

- *Create desirable' place, to attract foreign investors, and visually transform the city,*

- *To allow the formation of a market which is economically profitable and sustainable (*Choudhury, 2003, p. 32).

What is emerging is a new kind of geography, together with a new form of movement patterns. This new geography is structured around enclaves of wealth linked together with this new type of infrastructure of flyovers. There is movement between point A and B independently of the rest of the urban landscape. Between point A and B are thousands of points that affect as many people, but they are not as profitable for the state. *"This staggering and avoidance comes out from the very nature of these projects, to exhibit the contradictory change the ideology behind the city has undergone"* (Choudhury, 2003, p.32). Slums are tucked away under flyovers or moved away from view when new developments sweeps along. Suddenly, the city's geography is transformed so that the majority of city residents are the unseen (Choudhury, 2003).

Vertical segregation in Bangalore.

*The IT-hub 'Electronic City' is connected to the city centre with a
9km long private flyover.*

Flyover over old city market in Bangalore.

SECRET CITIES

There are those parts of the city that surround themselves with high fences and barbed wire, in enclaves, often described in terms of *gated communities*. Journalist Göran Dahlberg however described them as "self-imposed secret cities". There are also those Dahlberg describes as "secret cities"; areas and even entire neighbourhoods without high walls and barbed wire, but with social barriers that constitute as much of an enclave as the guarded gated community. According to Dahlberg, the self-imposed secret cities wants to be secret and the secret cities just *are* secret because someone wants to hide them away. Both of them however consider themselves *forced* to be secret (Dahlberg, 2010). Nevertheless, despite their very different appearance, they are quite similar. Both can be considered to be semi-formal societies, or informal communities with elements of formal, or formal with informal elements (Dahlberg, 2010).

Lemanski and Oldfield also draws an interesting parallel between gated communities and slums when stating that the rise of both are remarkably similar, and is based on the desire for a safe home and the independence to select a lifestyle that the state is unable to provide. The difference is that the state legitimizes the gated communities and prohibits slums (Lemanski et al. 2009). According to Jan Nijman, professor of Urban planning at Columbia University slums can be considered enclaves because they are exclusionary, but this is not "a function of their superiority" but the outcome of a basic survival strategy. This type of enclaves is formed not because people do not want to live among others, but because this is the only way to maintain a space (Nijman, 2009). Dahlberg further suggests that in the self-imposed secret city, the border is established from within, while in the secret city, the border is established from the outside (Dahlberg, 2010). "*These areas may also be called gated communities because their territory is clearly marked and the traffic is controlled by one or more designated entrances. This reflects intense competition for space as well as high ethnic concentration and segregation. Social control within these communities tends to ask very strong. Clearly, these are quite different from the affluent gated communities in American cities - but they are gated nonetheless*" (Nijman, 2009, p.12).

However, while the gated communities restrict movement in the city, Lemanski and Oldfield argues that slums creates a more integrated city. Land invasions make better located areas of the city available as homes for the poor, which is challenging their marginalization (Lemanski et al.2009). According to Dr. Mauro Barros and Circes Montheo, researchers at Federal University of Pernambuco, Brazil, the transparency of a slums walls depends on the scale it is analyzed in. A large-scale slum settlement can for example be seen as a social enclave, but when analysed at a smaller scale, it can be seen as an open space with rich social diversity (Barros Filho et al., 2010).

VOLUNTARY SEGREGATION AND THE FORCED

Peter Marcuse, professor in urban planning at Columbia University makes a difference between socially accepted segregation and the undesirable segregation, where voluntary segregation that does not exclude others is acceptable to some extent while forced segregation is not. While a few slums are formed voluntarily to meet the needs of safety, comfort and economic networks, the vast majority of slum areas emerge because the poor are excluded from the formal housing market and forced into the informal (Nijman, 2009). Dahlberg draws similar conclusions when he describes how people in the self-imposed secret cities have chosen to be there, while people in the secret cities are seldom there out of free-will. They have been excluded from the traditional city, and for various reasons they do not fit in there anymore (Dahlberg, 2010). That is also one of the major differences between walled gated communities and slums; the self-imposed secret cities tries to free itself from authorities' demands for civic engagement, while the secret cities are involuntary separated from them, as well as from many rights and community services (Dahlberg, 2010). However different they are, they nevertheless both perform high levels of territorial segregation, which on a city-level could be a serious threat to an integrated and accepting city.

Most secret cities are not reproduced in detail on the map. According to Dahlberg, this is because the map only shows the *positive ownership*, i.e. areas the government has control over. But while the map represent the slums as blank spots, an aerial photo quite likely displays the opposite. The blacker the spot, the denser the city fabric and the more likely a slum (Dahlberg, 2010).

Journalist Göran Dahlberg described slums as secret cities; areas without high walls and barbed wire, but with social barriers that constitute as much of enclaves as the guarded gated communities. Top left: Eijipura slum. Bottom left: Mariyappanapalya. Bottom right and right: Leprosy Colony.

06 LEPROSY COLONY

Through the way India and Bangalore has developed in the last few decades, Bangalore today holds thousands of slum pockets spread out throughout the city. One of these is Leprosy Colony, an old slum settlement centrally located near the train station in the old city. As a true offspring of the divided city of Bangalore, Leprosy Colony showcases a spectacular segregation from the rest of the city. People in the colony are separated through physical and social barriers, and rarely move outside its borders. At present, the colony is in the cradle of a major slum rehabilitation project. Saving schemes are already taking place and the major question is thus how to rehabilitate Leprosy Colony in order to make it an integrated and sustainable part of Bangalore? Our project take a stand IN_SITU; in the existing structures of the colony, its functions, strengths and problems, and looks at the city matrix in which it is located.
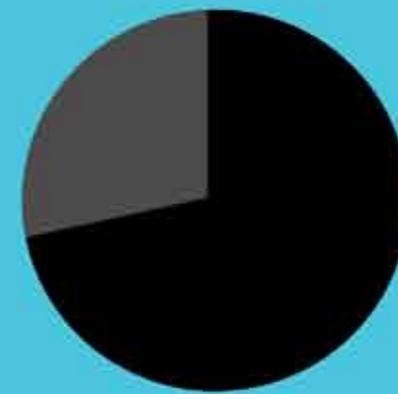
BACKGROUND

In the heart of Bangalore, close to the Bangalore City Railway Station, an old leprosy colony is situated. The colony was once formed there as the result of a group of lepers' struggle to form a common neighborhood in the city where they could live. As outcasts in the society, many lepers lived as beggars without a proper home, and were received with fear and prejudice by fellow city dwellers. Chinnappa was one of them. He was diagnosed with leprosy in the late 1950s at the age of 18, and fled his family and friends in fright of becoming a burden for them. After a failed suicide attempt, he met a group of other lepers with whom he slowly started to form a leprosy community. With help from the government, they acquired a piece of marshland by the railway tracks in the western outskirts of the city in 1963 and settled down. The grounds still belonged to the municipality, but the lepers got a permission to temporarily form a colony there. The settlement's strategic location by the railway tracks made begging easy for the lepers, and also came to function as a walking transport route connecting them to the city. The tracks made access to the Majestic area especially convenient, which was a popular begging location (RV College of Engineering, 2010).
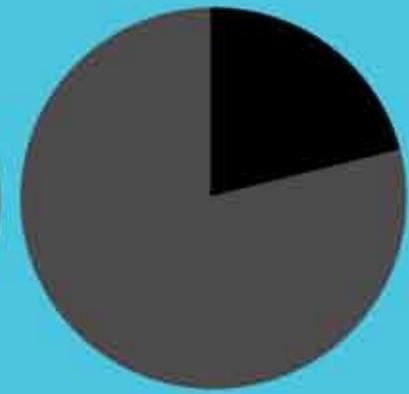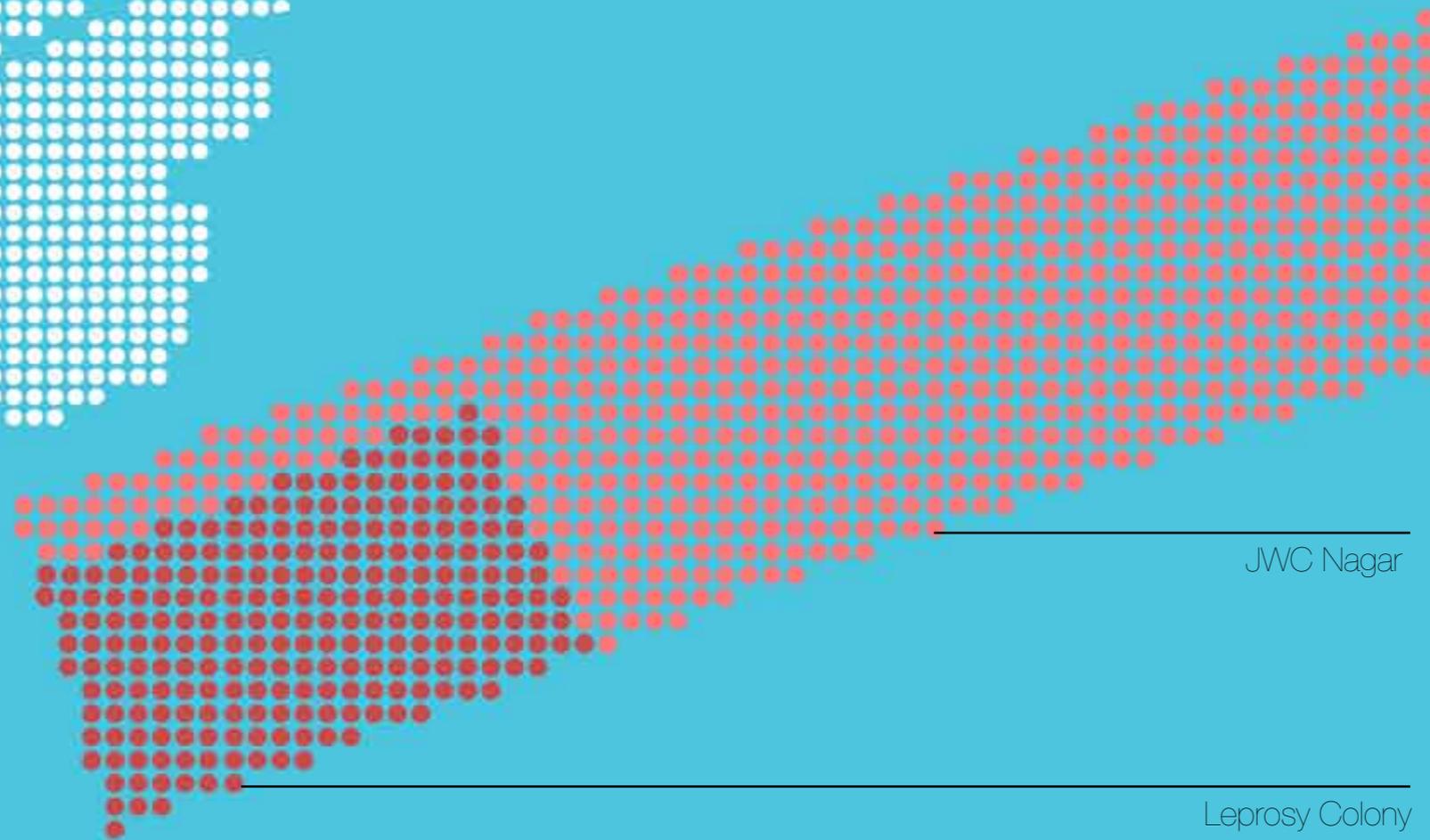
Aerial photo of Bangalore.

LEPROSY COLONY

JWC Nagar slum settlement

Leprosy Colony

Education

Members per family

Illiterates
Went to school
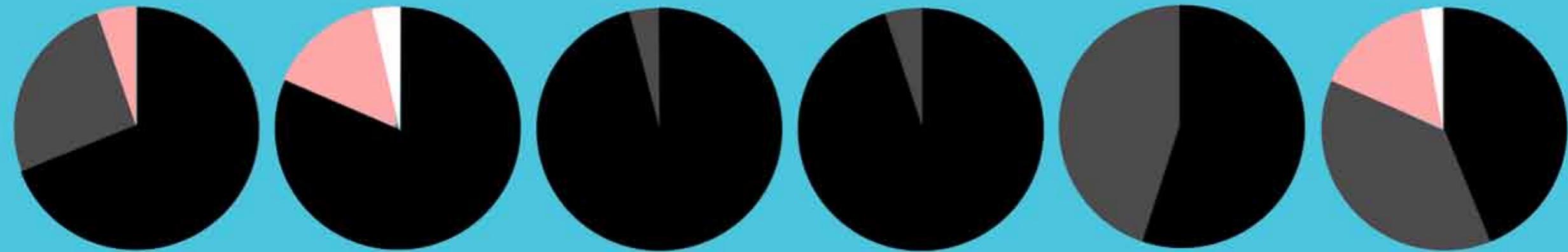
1-5
6-10

JWC Nagar

Leprosy Colony

40%
permanent, stable 'pac-ca' houses

1%
of the inhabitants suffer from leprosy

Transport to school / Work
- Other
- Walk
- Bus

Religion
- Mixed
- Muslim
- Christian
- Hindu

Household income per month
- Over RS 5,000
- Up to RS 5,000

Individual toilet
- Yes
- No

Employment
- Unemployment
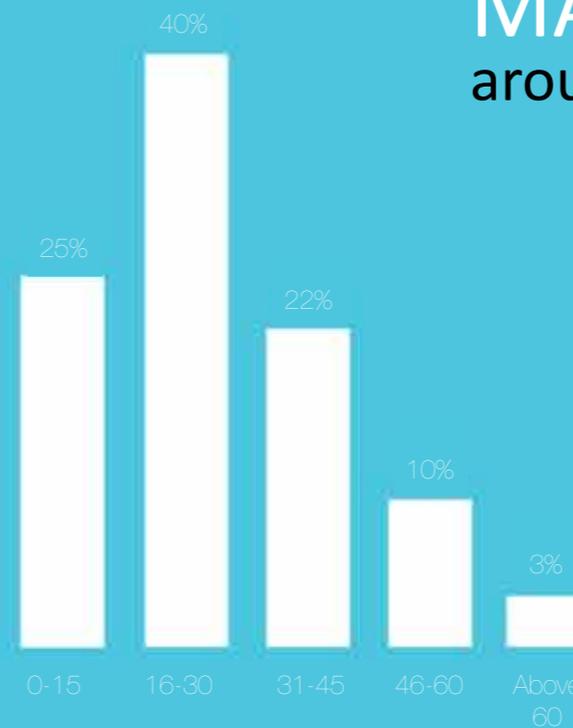- Employed

Mother-tongue
- Other
- Telugu
- Kannada
- Tamil

1,200

Inhabitants in Leprosy Colony

LEPROSY COLONY:
around 2,000 people per acre.

MANHATTAN:
around 100 people per acre

WORK:

unemployed/housewife	35%
coolie	23%
house maids	5%
auto drivers	2%
carpenter	2%
painter	1%
tailoring	1%
house servants	1%
student	23%
other	7%

Age groups in Leprosy Colony

40%
25%
22%
10%
3%

0-15   16-30   31-45   46-60   Above 60

Average age: 28,2 years

Panorama view over Leprosy Colony

Chinnappa and the first lepers in the colony eventually got electricity and water connected to the settlement, and more and more huts were taking shape along the tracks. The first colony was scattered and sprawling with a random layout and fairly large houses. The lepers initially shared the site with monkey performers and "regular" poor people from the city, but got increasingly separated from other groups as the city densified. The lepers were gradually pushed into the southwest corner of the settlement, and walls were erected as barriers between them and their neighboring settlements. Entrances to the leper slum were also delimited, and walls were erected along the railway to avoid accidents and to hide the slum. As well as the surrounding areas, the leprosy colony also grew denser from within. Residents subdivided their huts into two, and housing constructions increasingly overtook open spaces (RV College of Engineering, 2010).

LEPER COLONIES
– A HISTORY OF ISOLATION AND SECLUSION

Leprosy is considered one of the oldest diseases of mankind, and it is likely to originate from India (Bombay Leprosy Project, 2011). The infection emerges from a bacterium, *Mycobacterium leprae*, which in many ways is similar to the tuberculosis bacteria. The bacterium lives and grows in the skin and peripheral nerves where it causes damage with numbness as a common symptom. One of the most common misconceptions concerning leprosy is that the disease causes limbs to rot off. This is however not the case. Instead, the vast majority of physical defects are a result of wounds caused by numbness, which later lead to infection and finally amputation (Barrett, 2005).

The infection is spread through the air, and the bacteria most likely infect through inhalation. The exact mode of transmission has not yet been proven though; the incubation period is long and very few of those infected actually develop the disease. For people with a recognized infection, there are today several medication procedures available. However, treatment is a long process and can be very costly for poor families (Barrett, 2005). The disease mainly occur in tropical areas and it is estimated that more than 10 million people worldwide are infected today, with India on top of the list over the countries with most cases.

According to the Swedish Institute for Communicable Disease Control (Smittskyddsinstitutet), leprosy prevalence in a country is clearly linked to the country's material development level; poor hygiene, overcrowding and malnutrition conduces the disease (Smittskyddsinstitutet, 2011).

Expelling individuals affected by leprosy from the society, or confine those in restricted areas have been common practice in most cultures throughout history (Barrett, 2005). In the late nineteenth century, leprosy legislation was however incrementally introduced in India as a result of public pressure from European and Indian elites to isolate those deemed as a "threat to the Empire". The Berlin Conference in 1897 resolved that "*Every leper is a danger to his surroundings, the danger varying with the nature and extent of his relations therewith, and also with the sanitary conditions under which he lives. Among the lower classes every leper is especially dangerous to his family and fellow workers, but cases of leprosy frequently appear in the higher social circles*" (Robertson, 2009, p.489).

In India in the nineteenth century, the earliest extensive program for construction of asylums took place. More asylums was also to be found here than in any other country in the world (Robertson, 2009). The majority sought their entrance to leprosy asylums voluntarily, but some were also placed in asylums under the Lepers Act of 1898. However there were always more people in need of asylum than there was availability (Robertson, 2009). The leprosy asylums in India underwent major changes since the first colonies in the 1870s, and by the 1940s they could be divided into three forms; "*the well organized sanatorium for active and infective cases, with proper staff, buildings, and equipment; the asylum for crippled, deformed, and disabled cases; and the agricultural colony in which patients could maintain themselves*" (Robertson, 2009, p.479). The asylums aimed to be at the right balance between remoteness and accessibility, mostly some distance from the city and next to a thoroughfare. A road nearby was an income opportunity for the lepers by begging. They varied often in size and organization as well as in their built structure, with strong influences from local materials and local buildings (Robertson, 2009), however the general practice were to erect a surrounding wall.

The benefits of the colonies were the opportunity of better care for the leper patients, and protection for those who had been exiled from their communities. Nonetheless they also meant an increased social stigma. As isolated from the rest of society, the isolation itself created a greater fear of the lepers among the other citizens (Shumin, 2003). Professor Rod Edmond describes in his colonial and postcolonial studies how leprosy asylums constituted a type of enclosure institutions, as an attempt by colonizers to protect themselves from the world they actually colonized (Robertson, 2009). A report from 1905 strengthens his statement, as the work of the medical officer of health Dr. A. John Gergory in Robben Island, India, is being described. In his report, the British attitude towards Indians at that time strongly shines through as it explains how Europeans and colored infected by the disease should be segregated in separate colonies since they were on different "levels of civilization", both domestically and intellectually. The result of world-wide investigations done by the Leprosy Commission of the League of Nations in 1931 also concluded that "*asylums reflected the character of the society and culture in which they were established*" (Robertson, 2009, p.476). This goes well with the description of Europe's leprosy colonies by French philosopher Michel Foucault "*In the margins of the community, at the gates of cities, there stretched wastelands which sickness had ceased to haunt but had left sterile and long uninhabitable. For centuries, these reaches would belong to the non-human. . . . Leprosy withdrew, leaving derelict these low places*" (Robertson, 2009, p.475).

Although leprosy is a disease with a cure today, the societal attitudes towards patients are still characterized by fear and repulsion. Many of those who somehow have been linked to the disease are still socially stigmatized, and many still live within the old leprosy colonies (Robertson, 2009). Ramchandra, a middle-aged Banarsi man interviewed as part of an ethnographic study of social discrimination among people with leprosy in northern India, states that "*the burden is worse than the bacteria. You see, the infection is easily treated, easily cured with [multidrug therapy]. . . . But even when the leprosy has been totally eliminated, many people will treat you as someone who is cursed for all time. That is the major problem*" (Barrett, 2005,p.216).

1965 Lepers settling down on marshland in the outskirts of western Bangalore. The settlement is randomly scattered along a railway line, and houses are relatively large.

1970 As the areas around Leprosy Colony grows denser, ordinary poor people move into the settlement.
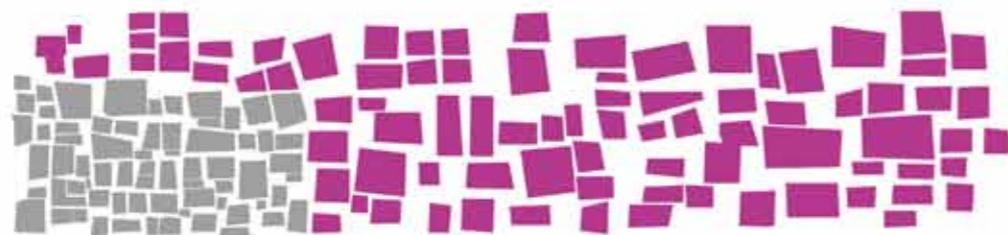
1975 The leper colony/slum settlement grows denser and more non-lepers penetrate the area.

1980 The lepers are increasingly pushed to the southwest corner of the settlement, and segregation between the lepers and their neighboring dwellers grow.
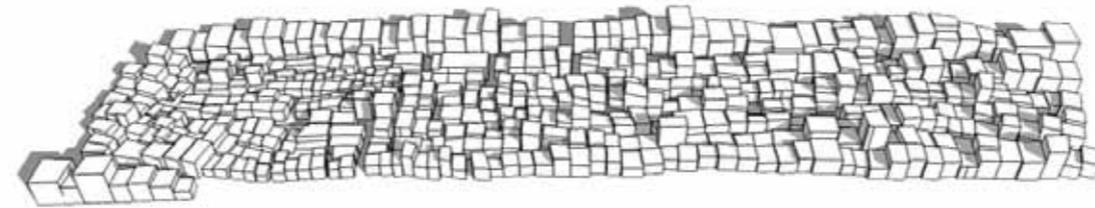
2010 Isolation becomes more and more evident as the area is densifying. Walls are erected around Leprosy Colony and surrounding areas, and slum streets are abruptly cut off when reaching the colony.

(RV College of Engineering, 2010 unpublished)

CONTEXT

Today, Leprosy Colony in Bangalore is an extremely dense slum area in the middle of the vibrant city. 235 families (approx. 1200 people) inhabit the 0.4 acre plot, which adds up to a density of about 2,000 people per acre. This could be compared to the density of around 100 people per acre at New York's Manhattan, which in developed countries is considered exceptionally dense. Still, Manhattan is built in multi-storey complexes, while Leprosy Colony has mainly ground-floor huts.

The number of people suffering from leprosy in the colony is today only one percent. It is mostly older people who bear the disease, of which some still remains from the infancy of the colony in the 1960s. The slum is today connected to a larger slum area (JWC Nagar) that spills out along the railway tracks. Leprosy Colony is however quite isolated from this settlement, and the colony's history of separation has made the two develop in rather different ways. While the surrounding slum is built more like a traditional urban neighborhood with good connectivity and a clear hierarchy of streets, Leprosy Colony has a confusing network of narrow path and dead ends. The surrounding slum's paths all ends abruptly when they reach Leprosy Colony, except one main path along the wall of the railway. This path forms one of Leprosy Colony's three connections to the outer world. The second entrance is a little side path off one of JWC Nagar's main streets. Unless you know the exact location of this tiny entrance to Leprosy Colony, you probably would never come across it. The opening is barely a meter wide and low roofs shade the murky path. A small Christian church marks the entrance. The third entrance is, just like the first, along a wall. By making a detour to the end of JWC Nagar, following a wall in an L-shaped course, you eventually reach the colony. All the three entrances are rather hidden and un-strategically located and it's clear that no one would accidentally happen to walk through Leprosy Colony by accident. Even though leprosy today is a highly curable and barely contagious disease, the stigma of lepers clearly lingers on. The physical isolation is evident, and even though most people in the colony don't have leprosy today, the psychological isolation is unmistakable. Anita, a former resident of the slum tells us the isolation makes people 'stay in their corner'. She admits she's barely been to the other side of JWC Nagar, even though she spent her whole childhood and youth in Leprosy Colony. One could guess that this partly comes from the physical boundaries of their little leprosy enclave of the slum, but also a strong history
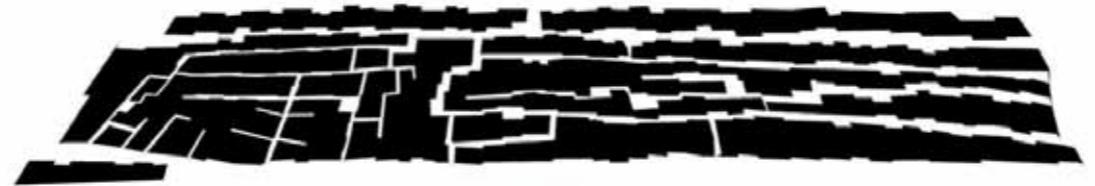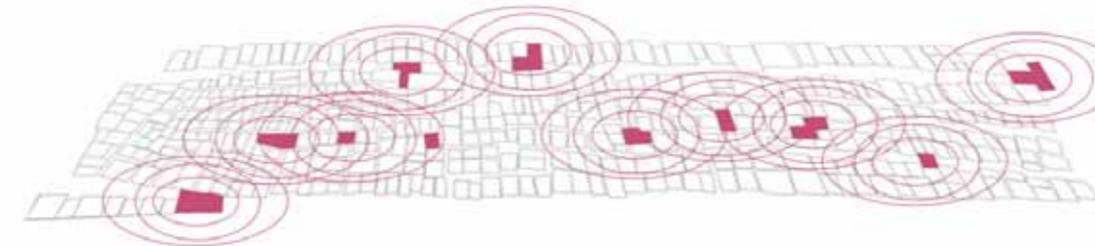

BUILDING VOLUME: LEPROSY COLONY + JWC NAGAR

LEPROSY COLONY

PATHS AND PUBLIC SPACES

BUILDING FOOTPRINT

SOCIAL NODES

of mental isolation of lepers.

The 235 huts in the settlement are generally very small, and lack some basic services. About 60% of the houses are "kaccha" houses, which means they are huts built out of scrap materials, or materials that require a lot of maintenance in order to stand up-straight, and to keep rain water out during the monsoon season. The remaining 40% of the houses are "pacca" houses, i.e. stable houses made out of permanent building materials like concrete or brick. This is quite a large number of pacca houses for being a slum settlement, and when walking around the slum

it is evident that a lot of the houses in Leprosy Colony actually showcase pretty stable and fine-looking constructions.
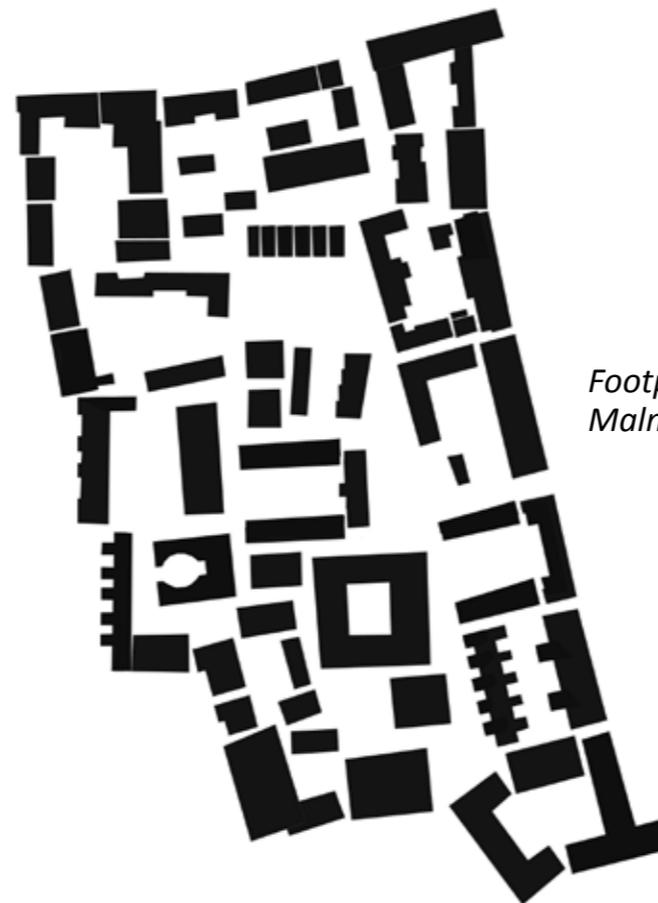
An old transformer by the slum entrance distributes electricity for the whole of Leprosy Colony as well as JWC Nagar. Most homes thus have electricity, and almost every household houses a TV. When you walk through the narrow paths of the slum, the electric light of TV screens frequently flickers past through open doors. Although electricity is well connected in the neighborhood, very few homes have individual toilet facilities. 95% of the slum dwellers have to use public toilets (SPARC, 2009),

of which some charge them 3 rupees at every occasion. Fresh water is a major issue during the monsoon periods when sewage pipes are flooded and mixed with regular water. Some houses are regularly flooded, and people talks about incidents when they waded through knee-high sewage-mixed water in their homes. Throughout the rest of the year, the water supply is regular, but the water quality is still so bad it has to be boiled to be drinkable.

Paths are narrow (0.5 - 2 meters) and most open spaces are in fact not open but covered by low roofs. The open space in Leprosy Colony is much delimited. In the centre of the settlement, a small semi-open community centre is located, and it is used heavily as an area for play, rest and socializing throughout the day. Anita tells us people sometimes argue about silly things like someone's wastewater running to close to someone else's door, just because they live so close together. There is basically no open space in this slum, she says, and quite frankly she is right. The amount of open space for a population of 1,200 people is tiny, however, the space is used extremely efficiently. Because of the minor size of the houses in combination with the high number of people residing them (on average 4.4 per house), the paths and all open spaces are in heavily use throughout the day. The zoning we normally find in cities, were planners "arrange" the public space is only an obstacle here, instead we see a steady flow of use. Cooking and eating as well as playing, working and bathing are performed in the open. On all our visits, the slum streets of Leprosy Colony were constantly buzzing of movement and activities even though it doesn't house any shops or other types of official service facilities.

An interesting parallel can be drawn between the open spaces of the colony and the insides of its houses. Instead of the specific categorization of use we see in many homes in developed countries where each room has a name that describes its use (like 'living room' or 'bedroom') the rooms or room (there is often only one) in the houses in Leprosy Colony has to change function throughout the day due to its lack of space. So when many rooms and public outdoor spaces in cities like Stockholm or New York City stays empty much of the time, the room(s) of Leprosy Colony are always filled with activity. One minute it functions as a bedroom, the next as a study and the third as a kitchen.

Most houses in Leprosy Colony are single storey huts of

Footprint of the 'dense' neighborhood of Bo01 in Malmö with 2,300 residents.

Footprint of Leprosy Colony with 1,200 inhabitants.

approximately 5-15 m². There are a handful of exceptions of larger houses and multi-storey buildings. Some of the multi-storeys are divided between multiple families, while some are inhabited by only one. The taller buildings are still quite small and have generally a footprint of no more than 30m². There is however evident that most larger buildings hold a more advance level of construction, and look more rigorous and well made than the smaller huts.

Of the people living in Leprosy Colony, most are Hindus originated from the state of Karnataka (where Bangalore is situated). A majority of the people belongs to the S.C cast, which is one of the lowest casts of the former Hindu cast system. Even though their background, religion and social status in many cases are similar, their mother tongues are however differing widely. Tamil, Kannada and Telugu are the languages widest spoken in the community, but most people also speak and understand Hindi. In school, children are taught English as a reminder of the colonial era, and people who have spent a reasonable amount of
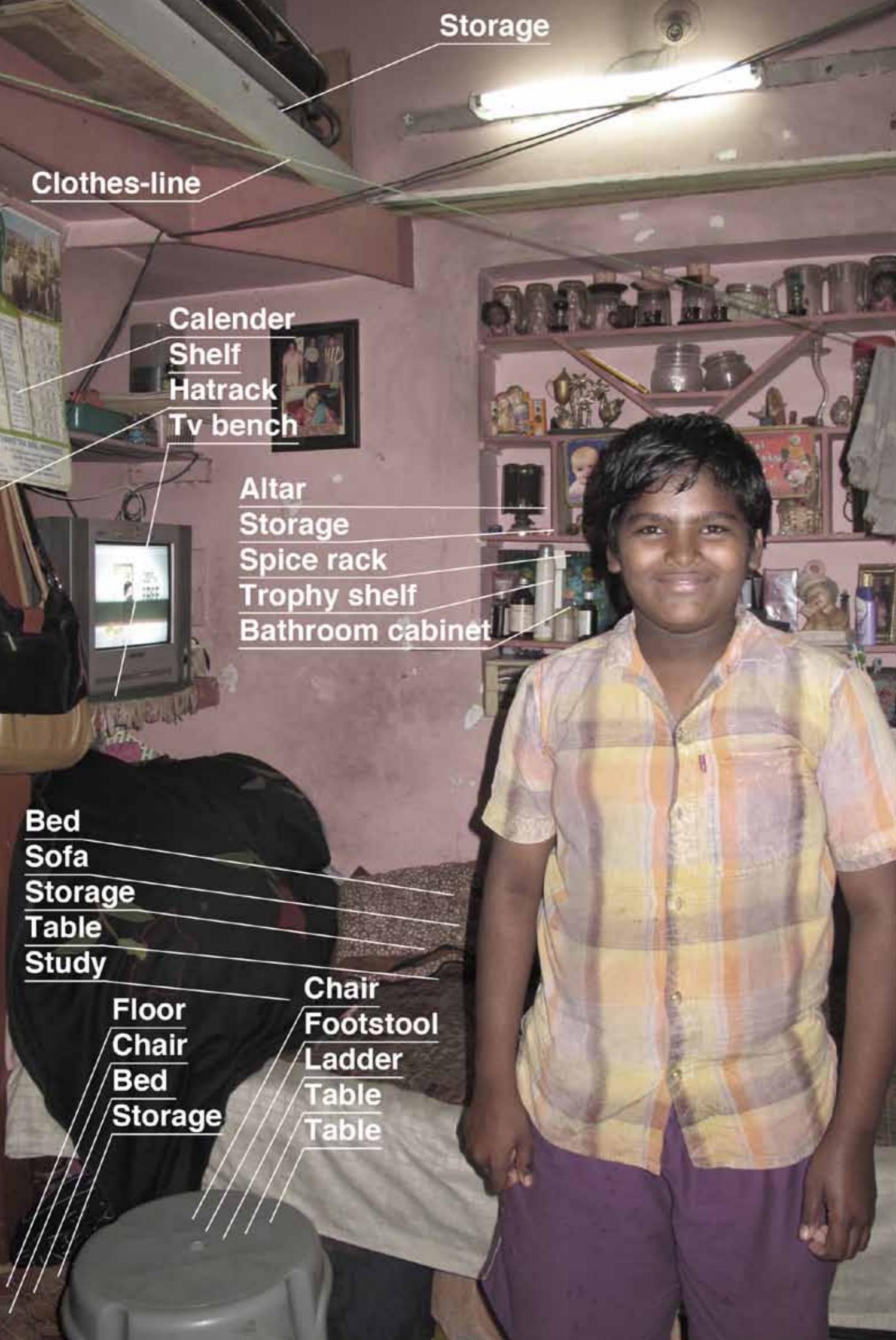
time in school accordingly also master English. About 70% of the residents in Leprosy Colony have attended school for some time, but any degree of higher education is practically non-existing. As the case in most slum areas, people are in general very poor in Leprosy Colony. Their total household income is rarely over 5,000 rupees (110 USD) per month, and unemployment is very high (35%). A lot of people have lived in the slum all their life, and barely know another life. It doesn't stop them from having hopes and dreams like everyone else though. 19 year old Karthik lives in one of the slum's smallest huts with his mother and younger siblings, and he happily tells us about his plans to go to university and eventually move to London to work for a multi-national company. Of the men working in the slum, a majority is doing different types of labour; roadwork, carpentry, painting etc. On the female side, unemployment or household work is very common, and some women also work in the domestic industry where they are cleaning homes and serving the wealthy (SPARC, 2009 unpublished).

The labels in the top photograph: Dress rack, Storage, Safekeeping Shelf, Bed, Altar, Soundsystem, Bedtable, Storage Wall, Table Storage, Floor, Bed, Workshop, Kitchen Stove, Watersupply Kettles

THE HOME

The houses of Leprosy Colony are generally small and crowded, and to be able to fit the daily needs of their residents, uses and functions are changing throughout the day. A shelf is thus not merely a shelf, but also an altar, a bathroom cabinet and a spice rack. The bed is in a similar manner not only a bed but also a study, a table and a sofa.
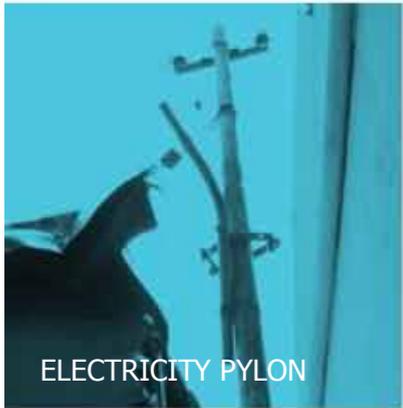
Most homes we visited in Leprosy Colony displayed a fascinating degree of tidiness and organization, and no space was left unused.
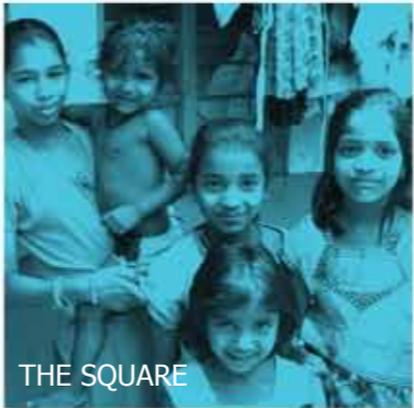
The labels in the bottom photograph: Safekeeping Shelf, Balcony, Study, Drying wash, Seating, Storage, Shelf, Entertainment, Storage, Bed, Study, Backrest, Bed, Sofa, Table, Storage, Cot, Floor, Bed, Seating, Workshop, Altar

Storage

Clothes-line

Calender
Shelf
Hatrack
Tv bench

Altar
Storage
Spice rack
Trophy shelf
Bathroom cabinet

Bed
Sofa
Storage
Table
Study

Floor
Chair
Bed
Storage

Chair
Footstool
Ladder
Table
Table

THE STREET

Multi-functionality and activity is also the main characteristics for the street, where functions that doesn't fit in the house are performed. Many tasks that we in the west would label as indoor-activities, like laundry, cooking and combing hair, are here performed in the open.

The street inevitable becomes a very social and collective space, where everyone shares the space with each other, and socializing all throughout the day.

JWC NAGAR
LEPROSY COLONY
THE STREET

MAKING OF INSCENTS STICKS
LAUNDRY
CLOTHES LINE
CLOTHES LINE
LAUNDRY
DOOR
DOOR
ELECTRICITY PYLON
DOOR
GARBAGE DUMP
WATER TAP
CLEANING
SOCIALIZING
DOOR
DOOR
STORAGE
STOOL
DRAIN
BALCONY
DOOR
PLAYING
DOOR
CLOTHES LINE
DOOR
DOOR
SHOES
MAKING OF INSCENTS STICKS
GOD PAINTINGS
WATCHING TV
HOUSEPLANTS
DOOR
DOOR
GARDEN HOSE
MAKING OF BELTS
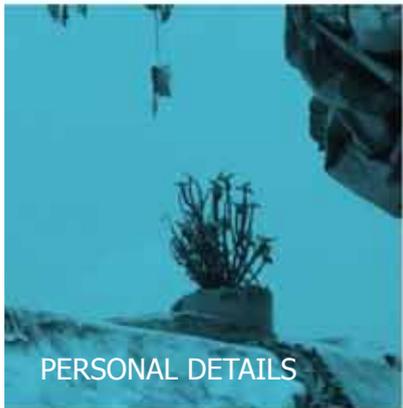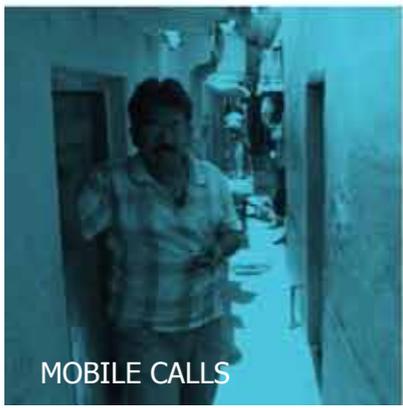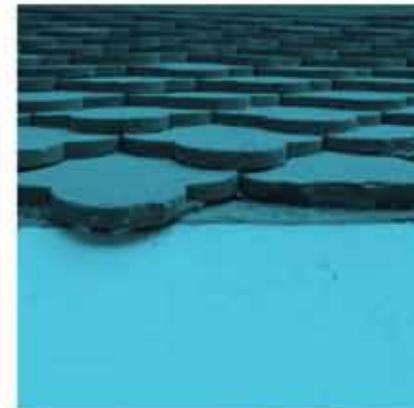MOBILE CALLS
BUCKETS

THE STREET

ELECTRICITY PYLON

THE SQUARE

PERSONAL DETAILS

MOBILE CALLS

DRYING CLOTHES

SOCIALIZING

LAUNDRY

CLEANING

WORKING

THE COMMUNITY

At the community level, Leprosy Colony is a bustling neighborhood throughout the whole day. The activities in streets and open spaces are constant, but change character slightly from the morning duties of tooth brushing, hair combing and breakfast cooking, to more work related tasks (such as production of incense sticks) and children's play in the day. In the evening, activities go back to hygienic doings like washing and tooth brushing, and to domestic duties such as cooking dinner. The production activates continues until late in many places in the neighborhood.

Men are very absent in Leprosy Colony during the day; almost only the elderly and unemployed men stay in the settlement at these hours. As there are very few work opportunities in the colony, men and working women are forced to travel to other parts of the city for work. The day time is thus strongly dominated by women, elderly and children.
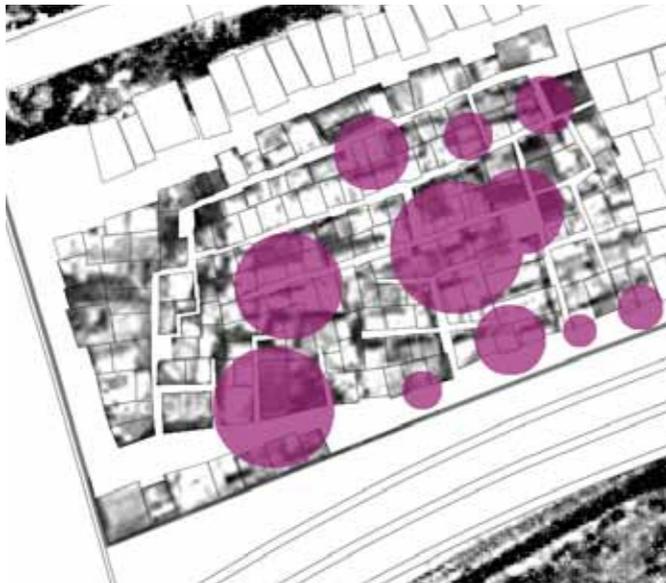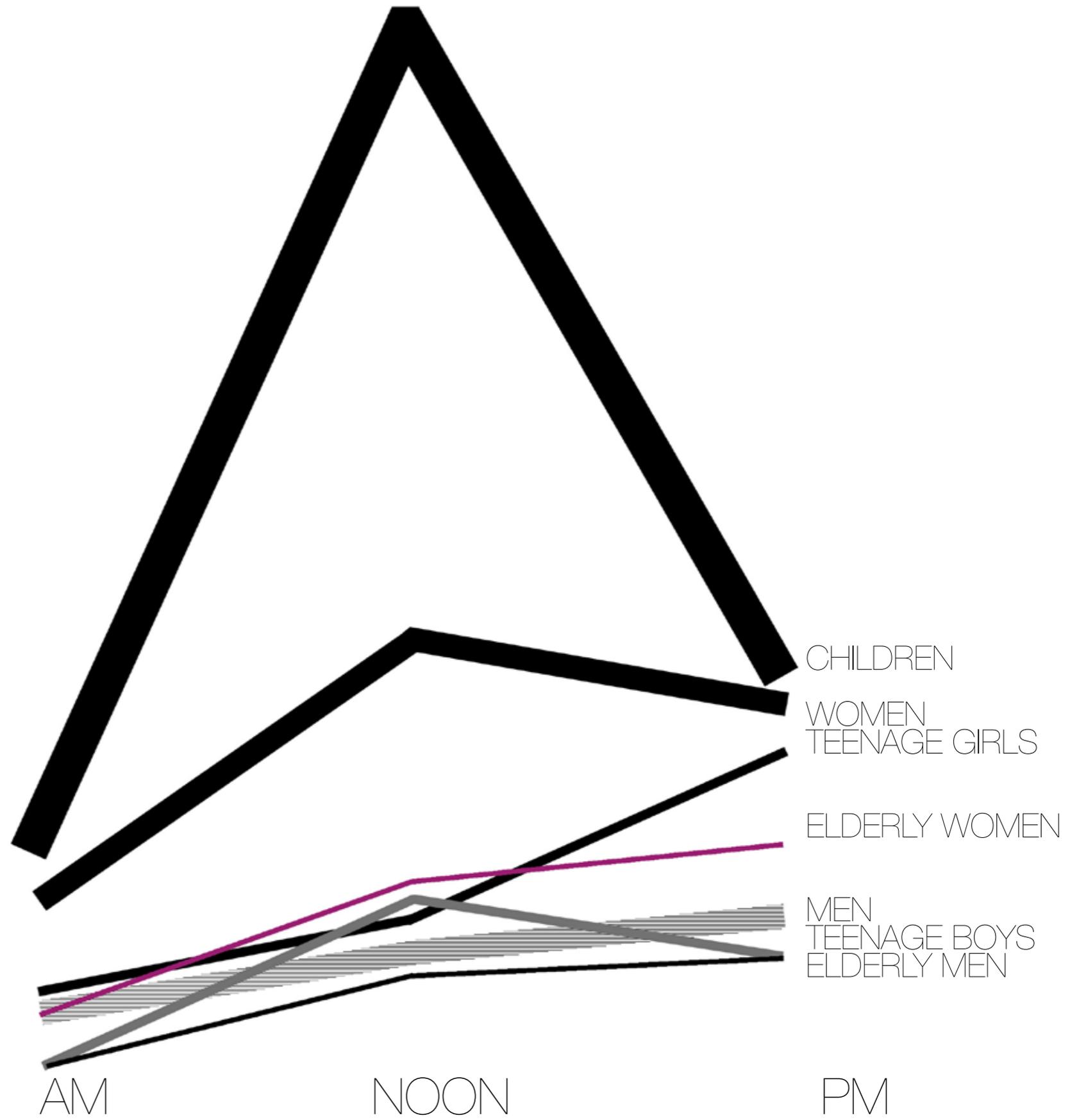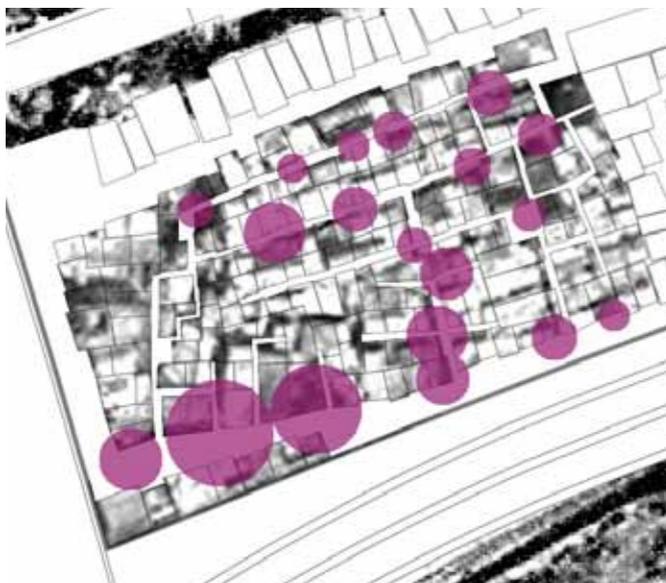
98

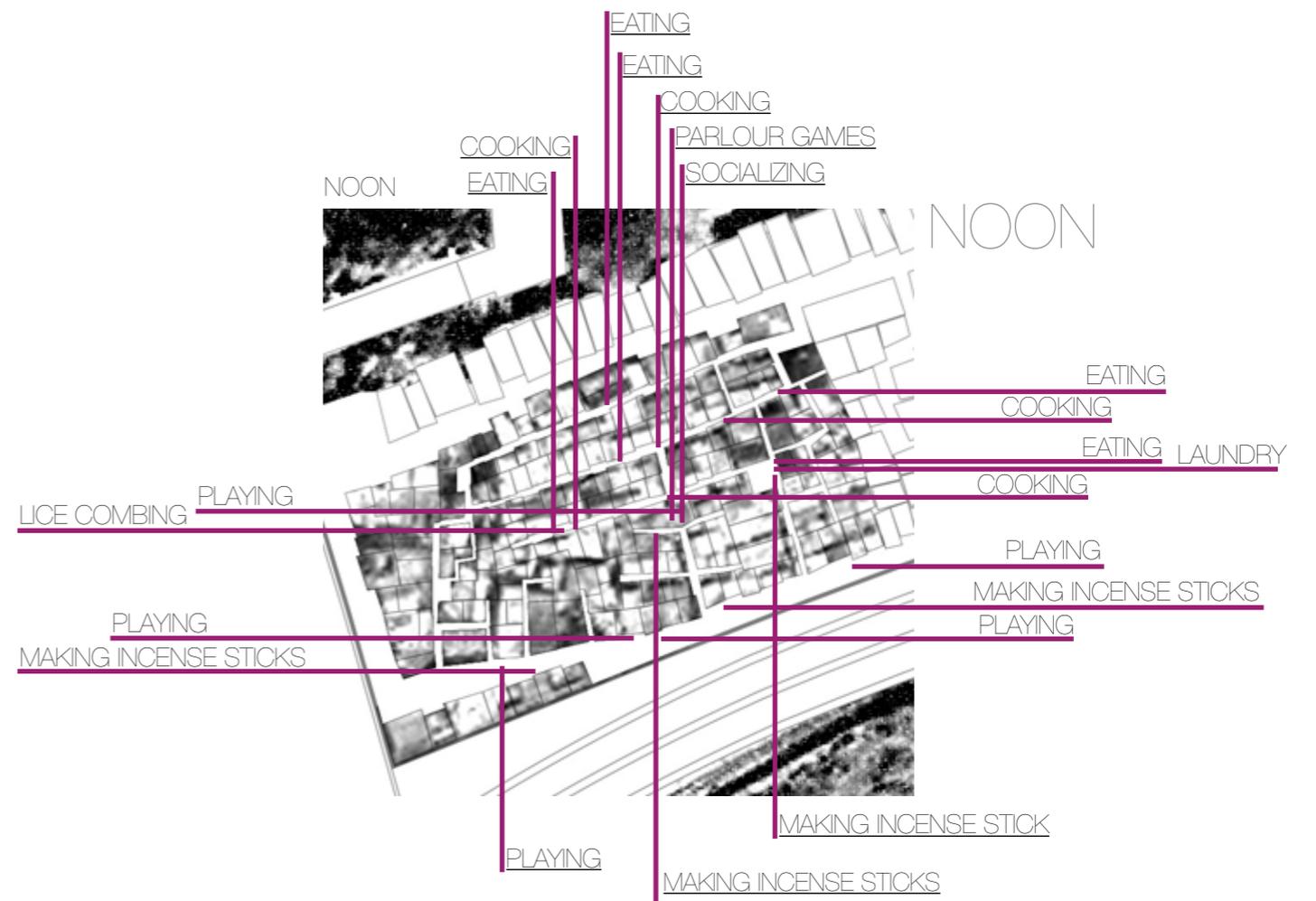DRYING

BATHING

COMBING

WORKING

DRYING

SHOPPING

AM

NOON

PM

CHILDREN

WOMEN
TEENAGE GIRLS

ELDERLY WOMEN

MEN
TEENAGE BOYS
ELDERLY MEN

AM   NOON   PM

(Diagrams based on our observations)

99

ACTIVITIES IN THE PUBLIC SPHERE

AM.

AM

LICE COMBING
BREAKFAST
TOOTH BRUSHING

LICE COMBING

BATHING

LICE COMBING

PLAYING

LAUNDRY
COOKING
SLEEPING

BATHING
TOOTH BRUSHING

MAKING INCENSE STICKS
MAKING INCENSE STICKS

NOON

NOON

EATING
EATING
COOKING
PARLOUR GAMES
SOCIALIZING

COOKING
EATING

LICE COMBING

PLAYING

PLAYING
MAKING INCENSE STICKS

PLAYING

EATING
COOKING
EATING LAUNDRY
COOKING

PLAYING
MAKING INCENSE STICKS
PLAYING

MAKING INCENSE STICK
MAKING INCENSE STICKS

SLEEPING

WASHING

PLAYING

PM

LICE COMBING
COOKING
COOKING
SOCIALIZING

PM

SOCIALIZING

SOCIALIZING

SOCIALIZING

PLAYING

SOCIALIZING

COOKING   WASHING UP
LAUNDRY

PLAYING

LICE COMBING

SOCIALIZING

EATING

PLAYING
MAKING INCENSE STICKS
MAKING INCENSE STICKS

LICE COMBING

MAKING INCENSE STICKS

SOCIALIZING

MAKING INCENSE STICK

MAKING BELTS

BATHING

MAKING INCENSE STICKS

SOCIALIZING

CRUSHING

COOKING

RINSING

DOORS

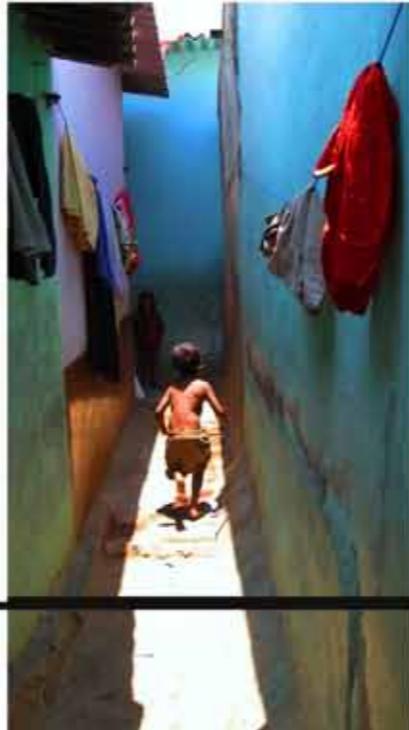WINDOWS/VENTILATION

TREES

ROOFS

The existing physical structures in Leprosy Colony presents a large variety of structures, colours, sizes and designs. All spaces have a maximized usage and rarely functions as a single thing. Roofs are for example not only used for sheltering the homes, but for drying clothes, drinking tea in the sunset and store water tanks as well.

DIFFERENCE IN SIZE

STREETS

WALLS

Buildings
Wall
Cul-de-sac
Watch dog

BARRIERS WITHIN THE COLONY

The colony is extremely isolated by impenetrable blocks of buildings and walls. There are also barriers undermining a good connectivity *within* the community in form of numerous cul-le-sacs and aggressive watchdogs.

Public
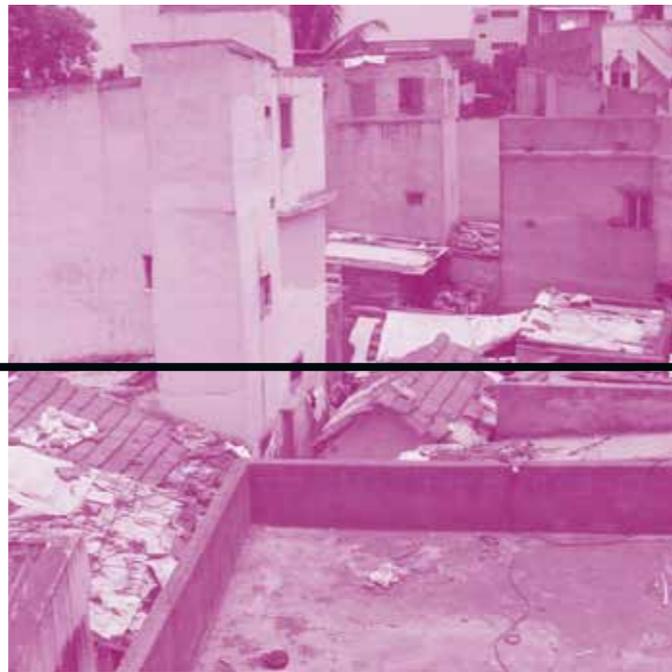**Semi-private**
Private

PUBLIC AND PRIVATE SPACE

Since the whole colony is so isolated, the entire community could be seen as private. There are however different degrees of privacy, and some paths are more 'public' than other. There's a strong connection between the hierarchy of paths and the privacy/publicity of public space, and the higher hierarchy, the more public the path becomes.

Busy

Quiet

HIERARCHY OF PATHS

Even though all paths within the colony are very narrow, there are some paths of higher hierarchal order than others. The cul-de-sac are clearly for residents on that specific path only, while the more connected paths hold a stronger position in the community.
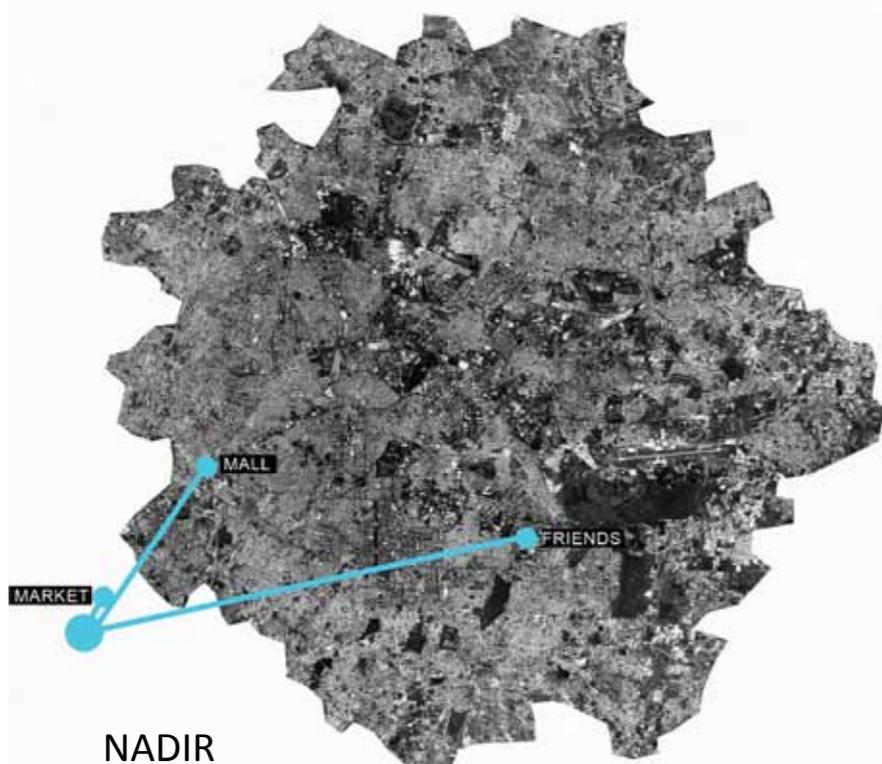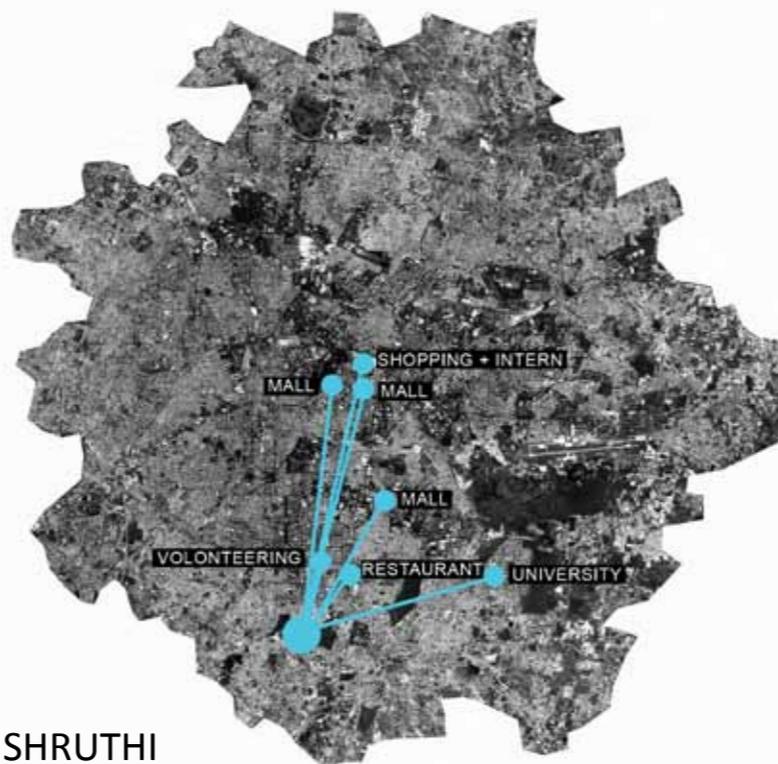
THE CITY

According to our observations and interviews, we conclude that the way people move around Bangalore is strongly linked to their neighborhood and social group. In this study, 6 Bangalore residents have drawn up their movement patterns in the city. The three residents forming the middle-income group (student Shruti, architect Nadir and IT-consultant Roland) all moves larger distances and see more of Bangalore as 'their' space. However, they still move mostly between social 'islands' such as gated communities, malls and protected business villages. The three residents of Leprosy Colony are more isolated in their movement pattern and barely leave the immediate surroundings of the colony. Whether this is linked to social or physical barriers is difficult to say, but the segregation is evident.
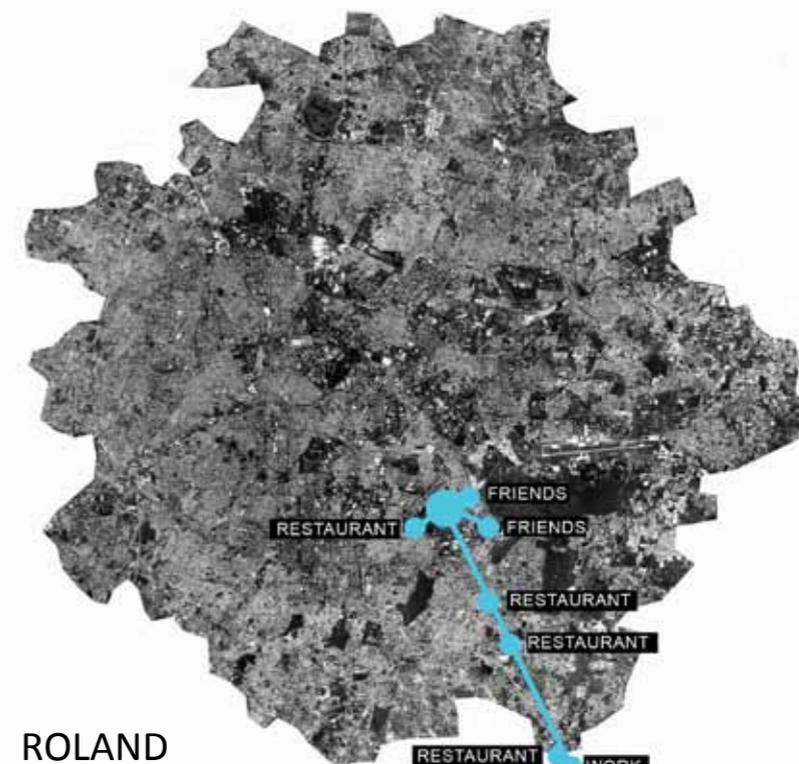

NADIR

Nadir is an Indian architect who lives in a newly built gated community in a former coconut palm plantation in Kengeri in Bangalore's periphery. 13 luxurious three-bedroom houses form the small community, and new gated communities are arising in close proximity to the site. The area is strictly residential, and in order to do the daily shopping, Nadir has to go to the local market some two kilometers away. Nadir's work as an architect is flexible, and he can thus base his work at home. He says he can find most things he need in the area; the local market serve him with basic groceries and locally grown vegetables, and the particular things he cannot find there, he either grows himself or buy in the city centre when he occasionally goes there for work or friends. The city is nevertheless quite far away. To reach the city centre, an hour by car is a minimum.
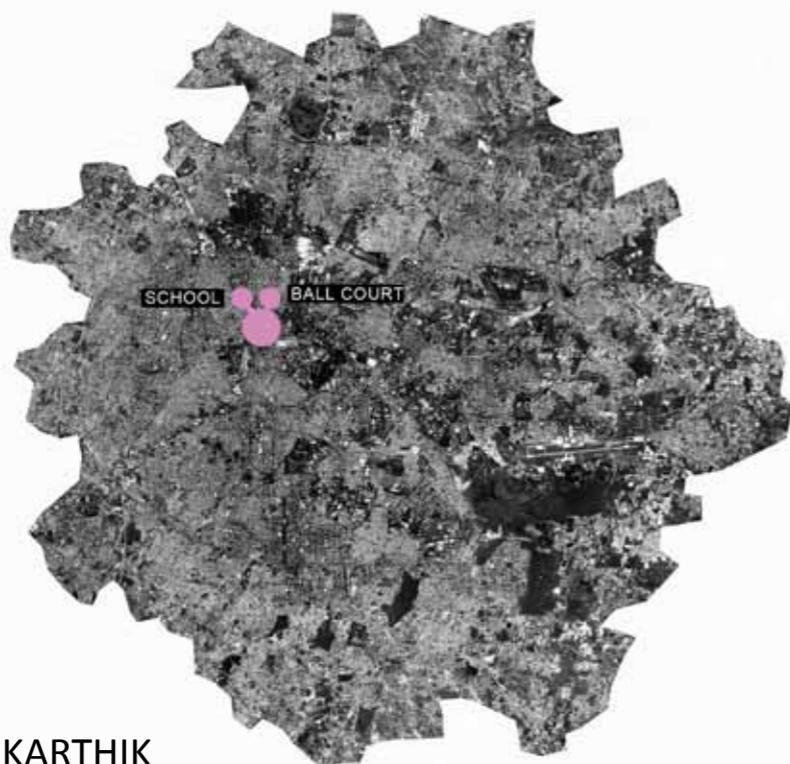
SHRUTHI

Shruthi lives in a big house in J.P. Nagar (south Bangalore) with her parents and sister. She is 22 years old has lived all her life in Bangalore. In March she finished her BA in computer sciences at Bangalore University, and after the summer break she will continue her studies with a two year MA in Mass Communication and Journalism. In her spare time, she likes to hang out with her friends in malls around Bangalore. In the malls they go to restaurants, cinema, bowling, paint ball, watch sports games on big screens and drink beer. She especially likes *Forum* in Koramangla and *UB City*. There's also a water amusement park, *Wonder La*, which she sometimes visits. However, for shopping she prefers the big commercial streets of MJ Road and Commercial Street in central Bangalore. She sometimes volunteers at a school for blind in her neighborhood. She has also spent some of her university breaks doing internships for different media concerns at MJ Road.

ROLAND

Roland is German and lives in Koramangala in southern Bangalore where he rents a big house. He works as an engineer in the satellite IT hub of Electronic City, and travels there five or six days a week. His social connections and spare time is mainly spent along this axis; Koramangala - Electronic City. He goes on the newly built private 9 km elevated flyover all the way to work. It starts in Koramangala and finishes in Electronic City. It is convenient and fast, and paid for by his work.

INDIVIDUAL MOVEMENT PATTERNS
MIDDLE-INCOME GROUP

KARTHIK

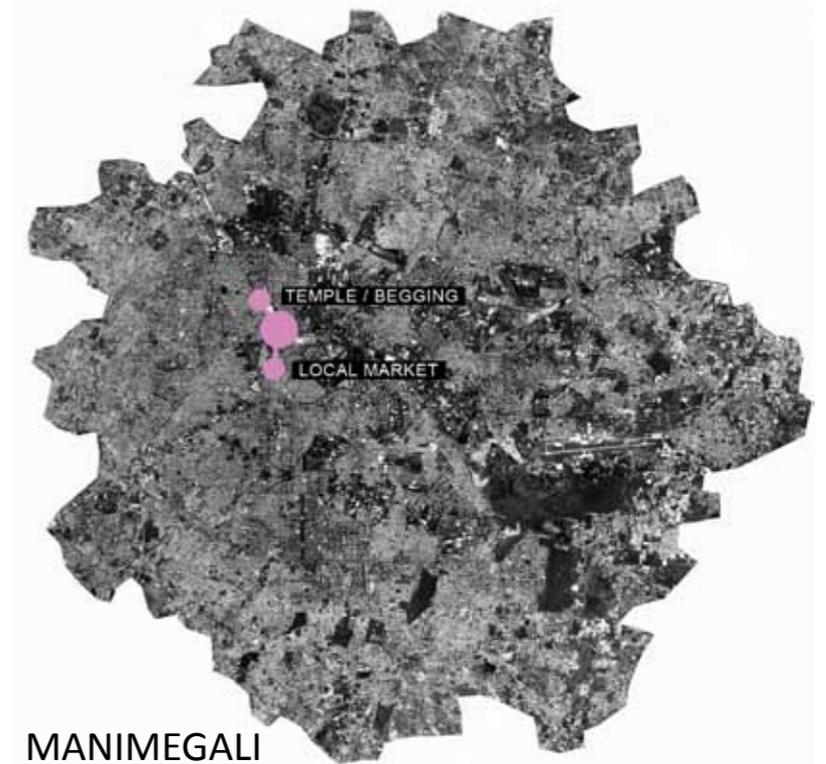In a 5 m^2 hut in the middle of Leprosy Colony, Karthik is living with his mother, younger sister and brother. The small hut was built by Karthik's late father, and Karthik has lived there all his 19 years. Karthis speaks good English and is going to a school close to Leprosy Colony. He is studying business management, and wants to attend university after his elementary school years. Life in the slum is ok, he says, but he tells us he wants to move to London and work for a multi-national company when he is done with university. He spends a lot of his time in the slum; studying and helping out at home. When time allows he sometimes also plays cricket on the nearby mud court, or socializing with friends in the community centre next to his house

VIDIA

Vidia is 16 years old and lives with her parents and three siblings in Leprosy Colony. Her father works as a private driver in Bangalore and her mother makes incense sticks. Vidia have spent her whole life in Leprosy Colony and currently goes to secondary school 10 minutes walk from her home. When she is not in School she sometimes helps her mother to produce incense sticks. The incense sticks are sold in a shop in Okolu Purum which is located about 10 minutes walking distance away. The shop pays 22 rupees (0.5 USD) for 1,000 incense sticks.

Vidia sometimes also helps her mother buy groceries. There is a local market, Swastik Market, located 15 minutes walk from Leprosy Colony where she buys food for their basic daily needs. Occasionally she also walks to the big City Market, located in Bangalore's old city for more advanced grocery shopping. This takes her about 40 minutes by foot.

MANIMEGALI

Manimegali came to Leprosy Colony in 1971 from her hometown of Sidambaram in Tamilnadu. She was then in her early 30s and had lived with leprosy for about a decade. Today she celebrates 40 years in the slum, and regularly receives a medical treatment for her disease. However, the many years of leprosy have lead to a steady loss off fingers and toes. Her husband also had leprosy, but died in the disease 15 years ago. She now lives in a house in Leprosy Colony with her two sons, whom are working as carpenters and in the garment industry. The household incomes are however so low that Manimegali is forced to beg on the street for a living. She normally begs by the Anima Temple close to the slum.

109

PHYSICAL ISOLATION

Tall walls enclose two of Leprosy Colony's sides. On the southern side of the slum, facing the central parts of the city, a tall wall separates the railway tracks and Leprosy Colony. When inside the slum you cannot see the trains passing by, unless you live in one of the taller multi-storey buildings, but you can always hear them. The opposite side of the tracks are inhabited by the Bangalore Police Force. Sad-looking slab block housing for police personnel and their families are lined up in straight rows, shaping a drastic contrast to Leprosy's intermezzo of huts and paths. Directly west from the colony, a major road underpasses the railway. A tall wall divides the slum from the road, and the combination of the deeply sunken road and the wall next to Leprosy Colony is a striking wall of almost 10 meters. On the opposite side of the road, a new Metro station will be built as part of the city's first phase Metro developments. The elevated train line will connect the city centre with the western parts of the metropolitan

region, and preparing groundwork has already started. Leprosy Colony will thus be situated just next to the new station, and will naturally be on a highly attractive spot. The strong barriers currently closing off the settlement will after this construction quite likely seem maladjusted as the Metro station's catchment area will require an improved connectivity and accessibility in the area. At the moment, a lot of people are walking along the railway tracks, as this is the most convenient way to transport oneself in the area. One main reason for this is the poor porosity of Leprosy Colony and JWC Nagar, and when the Metro is built, this problem is likely to grow.

On the eastern side of Leprosy Colony, past JWC Nagar, another wall and major road closes off the connection with neighbouring areas. However, the topographic differences are smaller here and the road is less busy - thus the barrier is weaker. The wall is also not completely impenetrable, but has one main opening. Spreading out on the other side of the road, there is an affluent

residential area. The furtherer away from the slum one goes, the nicer the houses becomes and the cleaner the streets. About one kilometer north-east from the slum, one of Bangalore's wealthiest and most flourishing areas is located. Here, Bangalore Golf Club has a large inner-city golf course, and some of the nicest hotels of the city are located. The contrast is sweeping.

Leprosy Colony is located in a very interesting sector of the city. As part of the old Bangalore it has not been subject to any significant development projects for a long time. But with today's rapid rate of development, all surfaces become equally valuable. The increasing pressure on land around Leprosy Colony has led to a consumption of public space to be converted to private development projects. The observed change is towards a greater segregation of land use into private spheres. This in turn negatively affects the communication system within the area as well as how the public space is used. The consequence is fewer spaces for the citizens to collectively rejoice, and it is especially
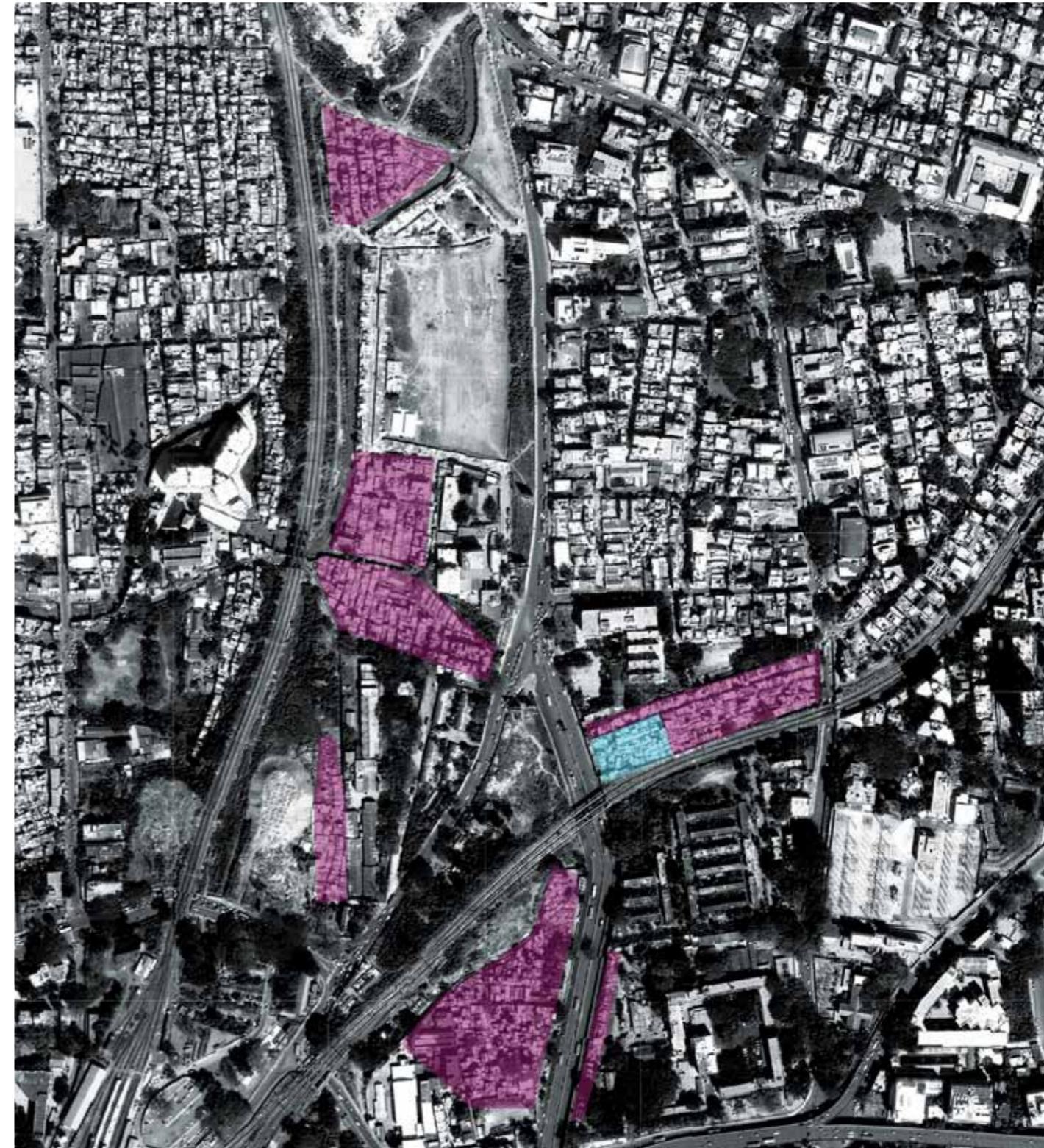

LEPROSY COLONY'S CONTEXT IN THE CITY

PHYSICAL BARRIERS AROUND LEPROSY COLONY

the poorest that increasingly lack places to gather outside their homes. As noted in Leprosy Colony, the slum dwellers live under very tight conditions and rely on public space for recreation and socializing. As a result, they use public space more extensively and for longer hours than the emerging middle class (Vagale, 2004).

At the same time, neighbourhood associations in the surrounding area have started staking their claim on neighbourhood parks, and are becoming more active in managing and planning the welfare of these parks and their neighbourhoods as a whole. Based on their ability to pay, middle-income groups in the district have a greater choice of recreation than the lower-income groups (Vagale, 2004). Further though many public spaces in the surroundings of Leprosy Colony may be owned publicly, many of them are in fact owned and controlled by certain groups, such as the city authorities, park authorities, private owners, the military and resident organizations (Vagale, 2004).

WALLED-IN AREAS   NEARBY SLUMS IN PINK

THE SURROUNDINGS

The development taking place has been fast, and in just a few years the area surrounding Leprosy Colony has changed drastically from a "small town" fabric to a dense urban development area. Hence a city that used to cater to a city of 2,8 million in 1980 has to now cater to a city of 7,2 million (UN, 2007). And perhaps that is precisely why the clash between the old and the new Bangalore, the poor and the rich India and the emerging enclave landscape becomes more distinct here than ever. The public realm is slowly diminishing and the semi-private realm is filling the void (Vagale, 2004) and there are three projects in the nearby area of Leprosy Colony illustrating this development extra clearly.

MANTRI SQUARE

Mantri Sqaure is India's largest shopping mall located northwest of Leprosy Colony. It opened in March 2010 and is a huge colossus of 160,000 m² inspired by worldwide mall architecture. Once inside, one could be anywhere around the globe, especially since one of the mall's biggest attractions is a large selection international brands not previously available in India (The Economic Times, 2010). Marc Auge, a French anthropologist, describes shopping malls of this kind as a "non place" where man is separated from the life that defines him and is now solely in the role of passenger, customer or driver (Augé, 1995). Docent Mahyar Arefi at School of Planning in Southern California believe these non places are inevitable in the city, but that it is necessary to integrate them with other places (Arefi, 1999), which Mantri Square is definitely not today. The mall is designed as a free-standing element from the rest of the urban fabric, blocking the accessibility of the entire district. To this huge building there is only one entrance. To enter you first need to pass a security check where your bag is searched, which is claimed to be because

of the terrorist threat but could as well be a way to keep those who are considered "wrong" in such an environment outside. In addition, traffic to this shopping mall has increased substantially since it opened, which had not been planned for, and with the result of roads heavily congested adjacent to the mall. Thus Mantri Square has become a nightmare for those who live in the area. For the construction of Mantri Square to be possible, Mantri Development had to approve 21 different conditions, among them the rehabilitation of a slum situated on the soon to be mall land. The slum was demolished and the slum dwellers were to be resettled a great distance from their homes. However, according to former opposition party leader M Nagaraj, none of the conditions were met by the developers, including that of the resettling of the slum dwellers. BBMP (Greater Bangalore Municipal Body) commissioner Siddaiah is of a different view stating that the BBMP has constructed houses at the resettling area and a few families have shifted there. However he adds that 20 families are demanding that new houses should be given to them in the same area as their former slum instead, and therefore has not moved to the resettling site (Lakshmikantha, 2011).

MANTRI GREENS

Mantri Greens is a residential area by the same developer as Mantri Square and located right next to the shopping mall. It is a completely closed area surrounded by high walls, where the shopping mall constitutes one of them. Only the residents are welcomed into the area through the two entrances. According to their website, the keyword for this accommodation is convenience; *"Mantri Greens at Malleshwaram is rated as one of the few locales that is dotted with the best of services. Be it the soon-to-come proposed metro rail, hospitals, schools, parks, supermarkets or dining outlets... you have it all within your reach. If this does not suffice, you have Mantri offering you a ring of amenities... pools, gymnasium, squash courts and more. In short, you have the world next door"* (Commonfloor, 2011).

An apartment for rent in this complex is described in an ad with

the words *excellent view, luxury 3 bedrooms flat and toilet, in a posh gated community.* However its surroundings are not changing fast enough for the city's wealthy elite. An Internet forum for Indian real estate market illustrates this clearly:

A   *"Hi, I am considering purchase of a resale penthouse apt in Mantri G. Looking for + or - opinions, reviews, comments from people familiar with the area/ building. Thanks, Jaya"*

B   *"Negatives - (list is long)*
1. Road in front is horrible.
2. There are slum dwellers, along compound wall, western side..."

A   *"Thanks for the info. I have dropped it from my consideration now [...]"* (Indian real estate board, 2010)

Mantri Greens is a typical example of a gated community, characterized by fear, as discussed in previous chapters. This became particularly obvious in June 2, 2011, when a wall that Mantri Developers had built outside their given land had to be demolished to widen the road outside Mantri Square that now was way-out congested since the opening of the shopping mall. The wall was also a part of the high concrete wall surrounding Mantri Greens, and the residents tried desperately to stop the demolition. They blocked the way for the developers and even attacked those manning the earthmovers. However they where outnumbered and retreated claiming that *"their security was now compromised with the wall's demolition".* The police, who were at the spot, had to assure them of providing security till the wall was rebuilt (The Hindu, 2011).

Mantri Greens; outside and inside.

TOWERS

POOL

CLUB

The planned metro station close to Leprosy Colony will be located across the Seshandri Road. Today this vacant lot is used by many of the nearby slum dwellers, either to play cricket or as a place for their cows to graze, and thus offers that open space slum dwellers from dense settlements need. However with the new metro station the area will change drastically.

The Metro in Bangalore, named *Namma Metro* is envisioned to have a powerful affect on the direction of the future growth of the city. At *Bangalore Real Estate Trends,* a website which gives you the latest information about the real estate industry in and around Bangalore, the metro stations along the Metro line are described as becoming *windows to a new lifestyle*. By this they mean easy access to commercial belts, retail hotspots, premium residential areas and places for entertainment. Further, the website predicts a relocation in the city of people. Instead of driving through the congested roads of Bangalore, many will move closer to a station with a belt of prosperous property along the metro line as a result (Bangalore real estate trends, 2011). According to a report by CASUMM (Collaborative for the Advancement of the Study of Urbanism through Mixed Media), the project will create direct displacement of people as a result of land acquisition as well as indirect displacement due to commercialization and gentrification. Big developers have shown a great interest in purchasing land along the metro corridor and land prices are most certainly going to rise. As a mutation corridor, commercialization of the stations and their surrounding areas as well as the entire Metro corridor will be encouraged. However, displacement, disruption of livelihoods and small local economies is the procedure of large infrastructure projects all over India today. Together with no public consultations, no transparency or disclosure of information, and an attitude that doesn't consider public voice or objections as worthy of response, these projects display an determined effort to displace the unwanted from prime locations in the city (CASUMM, 2007).

To understand what future Leprosy Colony and its surroundings could be experiencing, a look at the new Metro line in Delhi, built in 2002 is helpful. Delhi Metro impacted the land value and land use up to one kilometer distance from the Metro corridor. Less dense residential areas increased in density, and slum areas gave way to middle class residential areas, and commercial shops came along the metro corridor (Jain et al. 2011). The modern transit system of Delhi's metro was built especially to shut homeless and poor people out by high priced metro fares and hawking made illegal, or as DMRC Chief Vigilance Officer puts it *"even in the US, Paris and London poor people try to look for shelter inside metro stations. We took a lesson from that and decided to create a system in which only commuters with tickets will be allowed inside the paid area"* (Siemiatycki, 2006, p.288). This statement sums up the anti-poor attitude that has permeated the entire process of building the Delhi Metro line (Siemiatycki, 2006).

In a city like Bangalore that is already strongly divided between rich and poor, there is a risk that the development of the metro line further increases the gap. The rich are invited with pleasure to look out through "the window to the world", while the poor are evicted and excluded from a development they cannot afford to take part of. However this new metro station, if developed in a good way, can also result in many positive effects for its surroundings. As its original purpose, it can obviously mean reduced travel time for the slum dwellers. Also, it will attract new people to the area. Services which are not currently available for the slum dwellers to the same extent today could have its foothold here as number of people in need of it increases. With Leprosy Colony's strategic location, local jobs (both inside the slum in form of smaller businesses as jobs and new businesses adjacent to the station) can be made possible. There may also be great advantages of land being redeveloped around the metro station. Done right, this could become an area that integrates the today so separated enclaves of the district. Also, this area could offer Leprosy Colony's residents the public spaces they lack in their own domain today.

New metro station

Future metro station, across the street from Leprosy Colony.

DEVELOPMENT PROCEDURE

The initiatives for the redevelopment of Leprosy Colony came from political authorities in 2009. SPARC and the Alliance was contacted and requested to lead the process of rehabilitation through communal participation, savings schemes, design, construction and implementation. Although SPARC is a major actor on the national NGO scene, they are relatively unknown and small in Bangalore, and Leprosy Colony would be the largest project undertaken by the branch. A small Bangalore based architectural office, Designether, also got involved through SPARC to make a plan of the development and the proposed houses. For various reasons the project was delayed for years, and in the Spring of 2011 when we got involved in the project, the process was more or less out of action. Financial issues and confusion between involved parts slowed the project down, and let slum dwellers of Leprosy Colony impatiently wait for action. As they had been promised change and were already involved in the savings scheme, a slight irritation grew as no new announcements were made (Choudhury, 2011).

One concern for SPARC in the preparations for the project was of political means. As the initiative of the development originated from a political person, party political tensions immediately arouse in the settlement. A few households with divergent political convictions were unwilling to involve in the project, and in some locations such unwillingness could easily undermine the whole project. As forced evictions were morally undesirable and far from an ideal scenario, SPARC were in one way or another strained to make these people change their minds to be able to complete the project. Eventually an agreement was made with all households in the colony, except a few along the western wall, to participate in the project. For most people, the rehabilitation project was incredibly exciting and welcome, as their standard of living was poor.

SPARC's idea of the rehabilitation was similar to their previous Bangalore projects, like Austin Town. The slum was to be demolished and new multi-family housing constructed in its place. This is one of the reasons why it was so crucial for SPARC to get everyone in the area on the boat. In an incremental slum upgrading project where every house was considered individually, this would not have been an issue. The difference between Leprosy Colony and Austin Town was however the involvement of

design oriented professions that would produce a plan, specific for Leprosy Colony, and not a pre-packaged set of governmental standard buildings. However, as the budget for the project was limited and no rehabilitation funding was guaranteed by the governmental Karnataka Slum Clearance Board until the plan proposal had been presented and accepted, the architect's fees couldn't be guaranteed, and thus the architect couldn't afford spending his time on the project. This catch 22- situation was one major reason why the project lingered on without progress for so long.

Through community participation programmes, people in the settlement were asked by SPARC about their preferences in the rehabilitation project. The discussions resulted in a list of requests from the dwellers, including: an improved sewage system, street lights, water, electricity, tender rights, improved roads, individual housing, education infrastructure and healthcare infrastructure (Purushotham et al., 2011). The majority of these desires can be seen as rather fundamental, and things most people in the developed world would take for granted. Just the fact that people have to put these things up on a wish list is quite sad. How these requests can, however, be woven into the rehabilitation scheme of Leprosy Colony will be discussed in the following chapters. Analysis of conditions that needs to be improved, as well as the valuable assets that's already present in the colony, will also be presented, and eventually lead up to our proposed strategies for an improved, sustainable Leprosy Colony.

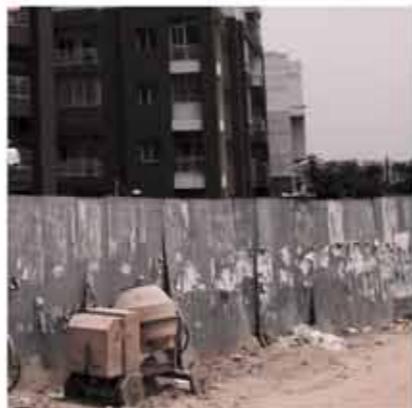"INFORMAL" ROAD-NETWORK

JWC NAGAR   APARTMENT BUILDINGS   LOW INCOME HOUSING AREA   POLICE GROUND

BARRIERS; RAILWAY, ROADS, WALLS, FENCES, GATES

OPEN SPACES; WASTELAND AND GATED PARKS

HIGH-CLASS VILLAS   MANTRI GREENS   GATED HIGH-CLASS   LARGE ROADS

Although Leprosy Colony and its surrounding slum neighbourhood only constitute a small fraction of the huge city of Bangalore, its development clearly illustrates structural patterns that are to be found all over the city. Bangalore has spread in all directions, both horizontally and vertically. Land has been exploited uncontrolled by low income earner in slum formations as well as high income earners in private development projects. New prosperous areas have been built, and around them poorer neighbourhoods have spread. Private enclaves of high-rise buildings has pushed aside those of low incomes, and instead formed brake blocks for the movement within the city. The big shopping malls with its cooling temperatures sell label bags for the price of a year's salary in Leprosy Colony. Development is set before everything else, which is not necessarily a bad thing, but the problem is that this development only affects a small part of the city's population positively. Next to the enclaves of western lifestyles, the everyday life continues in a traditional way for the majority. They are not considered part of the development and therefore not worth investing resources in. Instead, they see their important green spaces disappear in favour of private parks surrounded by fences.

What is emerging before us is an urban landscape clearly divided into enclaves, where the right to a liveable city is only for the chosen few. By studying aerial photographs, one can quickly see that the urban net of Bangalore is not a coherent fabric, but rather a patchwork of different homogeneous city structures with limited connection between them.

A FRAGMENTED URBAN FABRIC
AERIAL PHOTOS OF BANAGLORE

VALUABLE EXISTING ASSETS AND POSSIBILITIES
- TO CONSIDER THROUGH REHABILITATION

Leprosy Colony has some clear problems to address to be called a sustainable neighbourhood, and many of its residents currently live a life of poor sanitary services, water quality, housing and access to surrounding areas. The settlement has however also a wide range of very fine and valuable qualities that should be taken into account when planning a redevelopment of the area. Some of these qualities are quite basic, almost obvious to take into account, still frequently lost in slum rehabilitation projects.

HUMAN-SCALE AND VARIETY

First of all, Leprosy Colony showcases a very pleasant and inviting human-oriented scale. The houses are from one to four storeys tall in a wild mixture, and divided in individual houses. The houses are generally not completely detached (they always share at least one wall with another building), but they still give an impression of individuality and independence (see observations in previous chapter). The slum paths are very narrow (in some cases perhaps on the verge of impassable), but this human-scale layout present a safe and friendly atmosphere. The hierarchical order of streets makes it clear what path is public and what path is more private, without signs or fences. In a rehabilitation scheme of Leprosy Colony, one should obviously consider accessibility and connectivity, but also try to keep in mind the benefits of the small scale of the existing structure.

Related to the existing sense of human scale in the existing colony, is the very fine varieties within this small-scale context. As already mentioned, houses are widely varying in size, but are also built up by a variety of building materials, facade colours, door shapes, balcony sizes etc. All this together creates a very interesting living environment, and a stimulating streetscape, appreciated by its dwellers. Such a variation can be very hard as

a planner or designer to replicate in a large-scale, new-built area, especially without building a "pastiche world" and romantically recreate something "genuine". In order to maintain such a vibrant variety, one thus has to build a good framework for residents to maintain and recreate this variety themselves, i.e. enable them to develop their houses for their own individual needs and preferences, similar to they have done previously.

A VIBRANT STREET LIFE

The social street life in Leprosy Colony is very active and vibrant. This is described as one of the great benefits of living in a slum community, by the slum dwellers themselves. As most people live on the ground floor, mothers are able to watch over their kids play, and "living room activities" can easily be performed in the open instead of in the small house. An important question to ask oneself is thus how to maintain this social and interactive life between the buildings through the rehabilitation. If building in storeys to a larger extent is necessary -how do you keep these qualities dynamic when less people live in ground floor apartments? Also, if the slum is being opened up and re-connected to surrounding neighbourhoods in order to make it less isolated and segregated – how does this affect the intimate street life?

MULTI-FUNCTIONALITY AND FLEXIBILITY

Leprosy Colony is very densely populated, and is expected to remain so after the rehabilitation. The current multi-functionality, as well as the public spaces, is crucial to maintain in order for everyone to perform their daily activities such as laundry, handicraft and leisure in these spaces. To be able to sustain this multi-functionality, one has to consider a very wide range of activities when planning for public spaces. Western planners are often programmed to mark spaces with certain uses such as "playground" or "seating area" which could be counterproductive in a situation such as Leprosy Colony. Also, one could consider areas not normally used, such as roofs, to be made extensively accessible to release extra space. The challenge lies in maintaining the multiple activities that are a product of the informal structure within a new framework, without restricting new future possible forms of multi-use.

In order to maintain flexibility, one also needs to consider the potentials for residents to sustain their possibilities of

incrementally upgrading their homes over time, and set up a good framework for them to conduct constructions themselves. When families grow or when households' personal economy is increased, there must be ways for them to, to some extent, extend their homes.

ACCESSIBLE SPACE OF SURROUNDING AREAS

As a contrast to Leprosy Colony and JWC Nagar, several of the surrounding areas are actually not very densely populated at all, and there are great possibilities for urban infill and extensional development of Leprosy Colony there. Just by looking at an aerial photo of Leprosy Colony and its surroundings (see beginning of CHAPTER 6) one can clearly see the large open areas, and a difference in density. At the moment, the connections between the slum and these areas are very poor, partly because of this odd urban composition of areas completely different from each other. A smoother transition between the areas would possibly make the connection stronger, and counteract the prevalent isolation. The surrounding areas and their underdeveloped spaces should be seen as valuable assets in the transformation of Leprosy Colony.

SUSTAINABILITY

Within Leprosy Colony there is also much of an environmental aspect to nurture, and many of the ideas for a sustainable community, often emphasized by planners, are embodied here. The density is high with extraordinary pedestrian-friendly neighbourhoods that produce less waste than its wealthy neighbours. Its residents have learned to use and reuse both resources and raw materials in an efficient manner. For example, according to Anita living in Leprosy Colony, only local materials are used to build the colourful houses. There is no car traffic, but rather a great use of public transportation, and the food at the local market is locally produced. Partly in Leprosy Colony, but especially in JWC Nagar, there is also a mixture of work and housing that is desirable rather than having these functions separated. Furthermore, a strong social sustainability is to be found within the area. People live close to one other, creating strong networks and thus a strong social cohesion.

CONDITIONS TO BE IMPROVED IN LEPROSY COLONY

SEWAGE AND WATER

In most slum rehabilitation projects (provider based as well as supporter oriented) connections to formal, municipal water pipes, and the development of a sustainable sewage system is one of the top priorities. This is also the case in Leprosy Colony. As earlier described, the water quality in Leprosy Colony is poor, and most households don't have good access to acceptable sanitation. Toilet provision could be done by providing all households with separate toilet facilities, if finances are strong enough for this. If not, communal toilet construction blocks with a good amount of toilets could be an alternative. Electricity is fortunately already available in the community, and distributed among all dwellers. However, the lines might have to be overseen to make sure they really are properly and legally connected.

SECURITY OF TENURE

On top of the water/sewage needs, secure tenure is normally one of the first things to provide. As discussed in CHAPTER 2, a perceived security of tenure is vital for people to invest in their housing. Most households in Leprosy Colony already live there on legal grounds though, since they occupied the plot prior January 1st 1995. However, this legality is somewhat uncertain since it only allows people to stay until the day someone offers them housing in a slum resettlement somewhere else. The important thing is therefore to develop a formal tenure contract that really secures the land to the residents, and removes the possibility of forced resettlement. It is also important to make the dwellers' rights perfectly clear for everyone in the area. An option and alternative to formal land ownership agreements could be long term lease contracts, which potentially could be a cheaper option for the slum dwellers, but still secure enough to spark investment in their housing.

COUNTERACT SEGREGATION

Apart from these very basic and straight-forward provisions of secure tenure, water and sewage, there are many more things that requires considering in order to develop a sustainable redevelopment of Leprosy Colony. Most of these are on a settlement planning scale, but first of all the colony needs to be put in the context of the whole city. As Bangalore is noticeably segregated, the issue of integration should realistically be a top priority in all urban planning within the city, almost as important as functioning sewage systems. For the individual slum dwellers of Leprosy Colony, a functioning sewage system probably seems far more important than city-wide integration. However, looking at the city as a whole, letting Leprosy Colony remain a segregated enclave would be another needle in the coffin of a sustainable Bangalore. It could be one more step towards an isolating urban fabric and a move towards a city of fear, social injustice and ignorance. Improving the connectivity with neighbouring areas to obstruct current segregation patterns is therefore crucial. Leprosy Colony and its surrounding slum area (JWC Nagar) are small, and perhaps don't affect the city's mode of segregation/integration much. The city is however in need of great precedents of integrated neighbourhoods that function perfectly well without walls or fences, and that actually brings positive connectivity through the city. As discussed earlier, the Indian nation as a whole also needs precedents of upgraded slum areas that follow alternative models, and work towards individuality, site-specific design, incremental development and, most of all, integration.

IMPROVE AND EXTEND NETWORK OF PUBLIC SPACES

Strengthening the network of public spaces is important for the community of Leprosy Colony. Today there are very little public realm in the settlement, and it is very heavily used. It is mainly the small, every-day spaces within the settlement that needs to be extended. As the rehabilitation likely will result in homes larger than the present, one could argue the outdoor space will be less needed, and upper storey apartments will thus function just as well as ground floors. Maybe this is true to some extent, but one should remember that in an area like Leprosy Colony, the homes will very likely (even after extensions) fall in the range of 25-50 m² for a whole family to share. Consequently, outdoor spaces will certainly remain much needed throughout the day even after the rehabilitation.

In order not to obstruct the existing social patterns and erase qualities already there, the present social spots and gathering places could instead be saved, enforced and enlarged. Often these are connected to religious or social institutions such as temples or health centres (which is the case for the community centre in the heart of Leprosy Colony). Even though these every-day spaces are of immense importance for the residents, there is also a lack of space for larger religious celebrations and festivals in the area. Is there a way to create such a space in proximity to Leprosy Colony? These spaces has another type of use in people's every-day life and don't need to be in immediate proximity to one's home. By creating high-quality public spheres in the perimeter of dissimilar, divergent areas, foundations are laid for spaces that offer interactive and integrated meeting places for people from different backgrounds and districts. This can in turn counteract segregation.

ENABLE GROUND-FLOOR MICRO-ENTERPRISE

Today there are few home-based enterprises such as workshops, corner shops, chai cafés etc. in Leprosy Colony. One main reason for this is probably the rigid isolation of the colony; there simply are not enough people moving through the neighbourhood for such enterprises to be profitable. As soon as you move out from Leprosy Colony to the less segregated JWC Nagar slum, more workshops and shops appear instantly. Through a redevelopment procedure where Leprosy Colony and JWC Nagar become more accessible for surrounding areas, the foundations for enterprises will grow. Building in the possibilities for ground-floor micro-enterprise and workshops in the upgraded neighbourhood is therefore important. When the new Metro station is built across the Seshandri Road, only a few meters from Leprosy Colony, the conditions will change drastically, and the possibilities for enterprise will probably grow dramatically. At present, unemployment in Leprosy Colony is nearly 35%. Being able to run your own small-scale enterprise could save many families from acute poverty.

GENTRIFICATION

As the new Metro station is being built just next to the slum, land values in the slum are likely to soar. This is positive in some aspects, as the poor slum dwellers eventually will sit on properties worth a lot of money. However, it could also lead to an extended pressure from financially stronger groups, which might tempt the slum dwellers in the long run to sell the property, save the money and move to some less attractive location. The duality

of the matter makes it a complex problem; increased economical recourses creates new benefits within the area, at the same time it can also change the area's physical, social and cultural structures entirely. That is a big problem if one wants Leprosy Colony to retain its unique character, cultural and social diversity.

One of the solutions, however, is to upgrade the existing structures of the Leprosy Colony instead of tearing down and rebuild. In this way, existing social structures are preserved that may play an important role in the slum dwellers choice of staying. It is therefore important that the people of Leprosy Colony are engaged in the planning process so that the attachment and feel of "home" among the residents is preserved. By strengthening the community feeling, the slum dwellers themselves can decide what direction they want their slum to take. Simultaneously this counteracts what Ingrid Holmberg, senior lecturer in the Department of Conservation at Göteborg University, claims to be a contributor to gentrification; planners largely focus on planning leading to refinement of areas. Göran Cars on the other hand believes urban planners cannot do anything to stop gentrification. He believes that the actions that have real effect are controlled from above, including integration policy and housing policy (Andersson, 2010).

UPGRADE HOUSING STOCK

About 40% of the houses in Leprosy Colony are permanently built pacca houses of stable materials. Many of these homes are already quite nice, and don't need much work done (on top of formal connections to water and sewage systems) in order to reach desirable standards. The remaining 60% are however kaccha houses of poor quality, and in need of major upgrading, or simply reconstruction. Many of these are extremely small ground floor huts, and need to be extended vertically in order to reach a more pleasing size.

There are several different ways to carry out the house upgrading process, depending on what degree of supporter/provider model one finds most suitable. The provider-extreme would obviously be to demolish everything and start from scratch; constructing new homes on the site. As this would rip out everything familiar and specific for Leprosy Colony and most likely create something standardized and prefabricated, this is probably not the best alternative. There are a lot of valuable assets in the community that could be hard to replicate in a brand-new development. The

variety and interesting mixtures of houses would for example likely be very expensive to provide from scratch. As Leprosy Colony also shows a lot of examples of perfectly functioning and architectonically fine-looking buildings, it doesn't really make sense to demolish these and build new.

Because of this, some sort of supporter-oriented model or a supporter-provider hybrid would likely be the best solution. The simplest supporter approach would be to enable people to build all houses themselves by providing formal land titles and basic services (sewage, water, planned street/path network and public space layout), plus profound advice on durable construction methods. Co-ops could for example be formed within the community, in which a few households work together to help and advice each other throughout the construction process. Within each co-op a couple of people could receive comprehensive education on construction methods, and bring this forward to the rest of the co-op. One problem with this method is that most inhabitants of Leprosy Colony have had their land titles for quite some time, and still live in houses of very poor conditions. Clearly there is thus another obstacle to their passiveness in upgrading than just insecurity of tenure. The residents of Leprosy Colony are generally very poor, and one simple answer to why they haven't upgraded yet is probably because they cannot afford it. Advising on construction methods is thus not enough to enable them to upgrade their living, but some economical solution must be considered too. An answer to this problem could be to provide the community with durable and high-quality construction material as well. The money to pay for this would then ultimately come from the JNNURM "slum- free India" –scheme, just like it would have done through an Austin Town – style slum rehabilitation project, in combination with 12% savings of the slum dwellers.

Another problem with this pure supporter-approach is our aim to increase accessibility and an extended/improved network of public space within the community. It might be hard to enforce such changes in a pure supporter-oriented scheme, since people are then pretty much planning on their own. Doing these changes would mean demolition of some houses to make room for public space and access routes. How do you as a planner handle this, if everyone is upgrading completely on their own? How do you steer the progression of the community in a certain way without any construction workers who can read a map? Can you really upgrade a neighborhood after a proposed plan if you leave the whole construction part on the slum dwellers? Perhaps it is possible to do this if the community is very aware and genuinely

Variation and individuality; qualities to nourish in the upgrading process for Leprosy Colony and JWC Nagar

believe in the changes to be made, and if advisors and the local NGO have a constant presence in the community to direct the constructions.

One way to get around this is to apply a somewhat more provider-based approach, where a layout of public spaces and access ways are planned, and foundations or basic framework for the new pacca (former kaccha) houses is provided. The former katccha house owners start their own upgrading and improving process with provided materials after the foundations and/or wall and roof frameworks are laid. The pacca house owners also improve their homes with provided materials if they like, but use their already stable and functioning house as a base. This approach could maybe be defined as a mixture between the site and service model and the core housing model (as discussed in CHAPTER 3), thus a provider approach combined with enabling strategies.

Slum dwellers need to feel some kind of attachment and governance towards their own home in order to maintain and develop it creatively and carefully. In Leprosy Colony, people requested individual housing in the participation workshops prior to the rehabilitation scheme. As that type of tenure is preferred by the community, one would then have to keep individual housing steady in mind and interpret that in a sensible way in order to create an area that people want, and an area that the community will care for and govern. Perhaps the plot of land that Leprosy Colony sits on is too small for purely individual housing; reasonably the question should then be how to create multi-family housing in a manner that maintains the scale and functions of single family homes, in order to make residents satisfied with the result.

GREENERY

One quite effortless, but still rather influential aspect to bring into Leprosy Colony is the features of trees. Today trees and greenery is almost completely absent in the community. Leprosy Colony holds only one fairly large tree and a couple of small for its 1,200 inhabitants. Trees have multiple functions in dense settlements as effective air quality improving elements, pleasant shades for public spaces, noise barriers, flooding relievers during the monsoon and "stepping stones" for urban fauna. In addition, trees take up a very limited ground space but can shade an area several times its footprint, an essential aspect in a hot and humid climate like Bangalore's.

125

IN_SITU

IN SITU

AN ALTERNATIVE TO CONVENTIONAL SLUM REHABILITATION SCHEMES

IN_SITU is Latin and translates "in place" (dictionary.com, 2011). Longman Dictionary of Contemporary English concludes; *"if something remains in-situ, it remains in its usual place"* (Longman, 2011). Our proposal for Leprosy Colony is based on that very statement; instead of altering existing structures or moving slum dwellers to new locations, a site-specific proposal for a flexible and adaptive process in many steps is presented, for change IN_SITU.

TWO NOTIONS ON WHICH THE LEPROSY COLONY DEVELOPMENT IS BUILT, AND WHICH PERMEATES THE ENTIRE PROCESS;

CONNECTION LINKAGE INTEGRATION
- THE FACTORS REQUIRED TO UNLOCK LEPROSY COLONY

CONNECTION

IMPROVED CONNECTIVITY (ENCOURAGES AC-CESSIBILITY AND LAYS THE FOUNDATIONS FOR AN OPEN MIXED-USE SETTLEMENT IDEAL FOR MICRO ENTERPRISE)

LINKAGE

RAIL AND ROAD BRIDGING STRUCTURES (FORMA-TIONS THAT CREATES CONNECTION AND INCLUSIVITY BETWEEN LEPROSY COLONY AND ACROSS ITS SUR-ROUNDING RAILWAYS AND HEAVY ROADS, BLURRING THE EXISTING DIFFERENCE IN SCALE AND SOCIAL COMPOSITION BETWEEN NEIGHBORHOODS

INTEGRATION

REINFORCED NETWORK OF PUBLIC REALM (EXISTING CIVIC AMENITIES AND PUBLIC SPACES ARE KEPT AND REINFORCED TO MAINTAIN EX-ISTING COMMUNAL STRUCTURES. NEW PUBLIC SPACES ARE LOCATED AT STRATEGIC POSITIONS, BOTH IN LEPROSY COLONY AND IN PERIPHERAL AREAS, TO BRIDGE THE SOCIAL DIVIDE AND ISOLATION

FLEXIBILITY ADAPTATION ELASTICITY
-PROMOTING AN ADAPTABLE SETTLEMENT EVOLVING OVER TIME
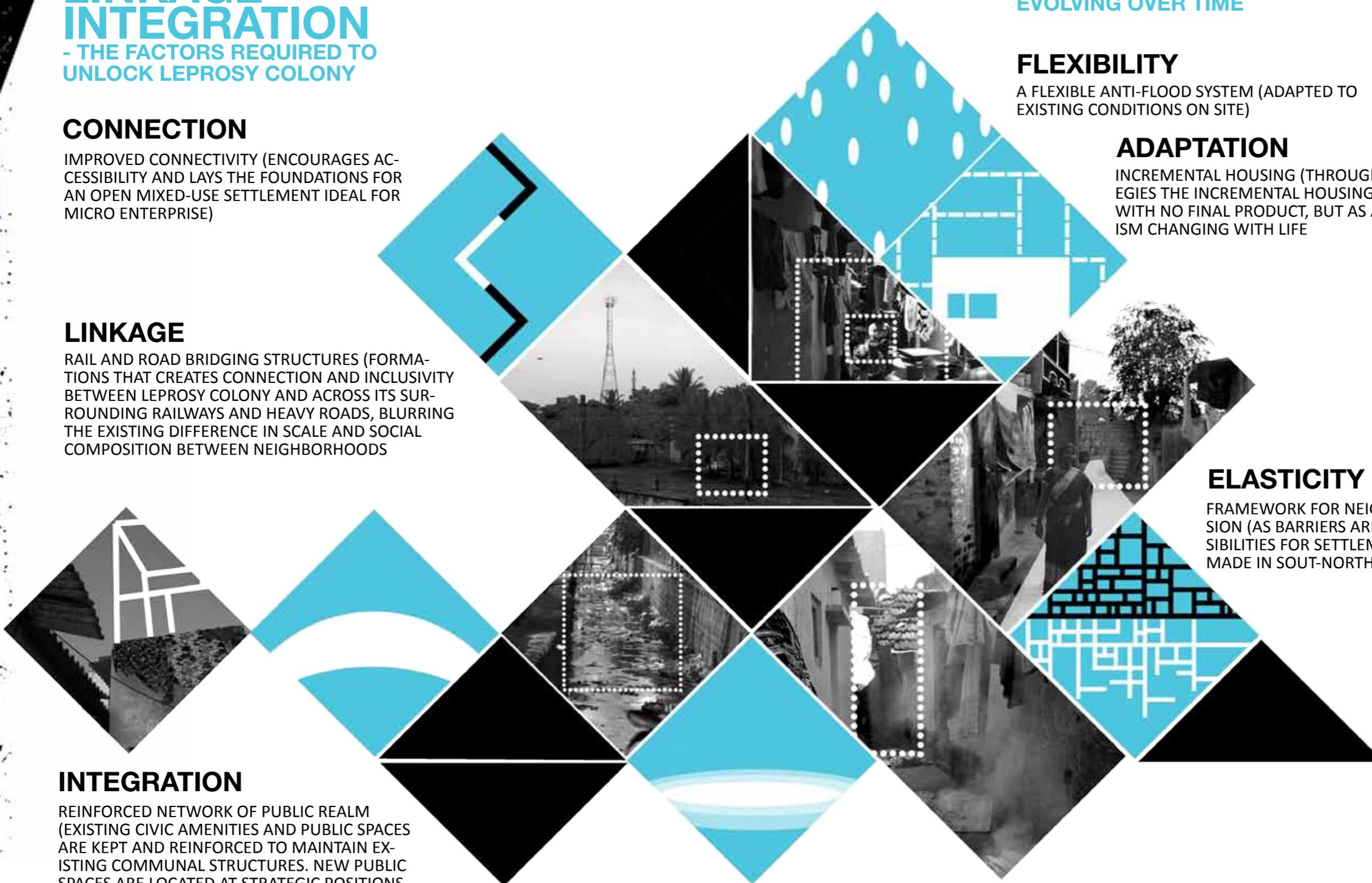
FLEXIBILITY

A FLEXIBLE ANTI-FLOOD SYSTEM (ADAPTED TO EXISTING CONDITIONS ON SITE)
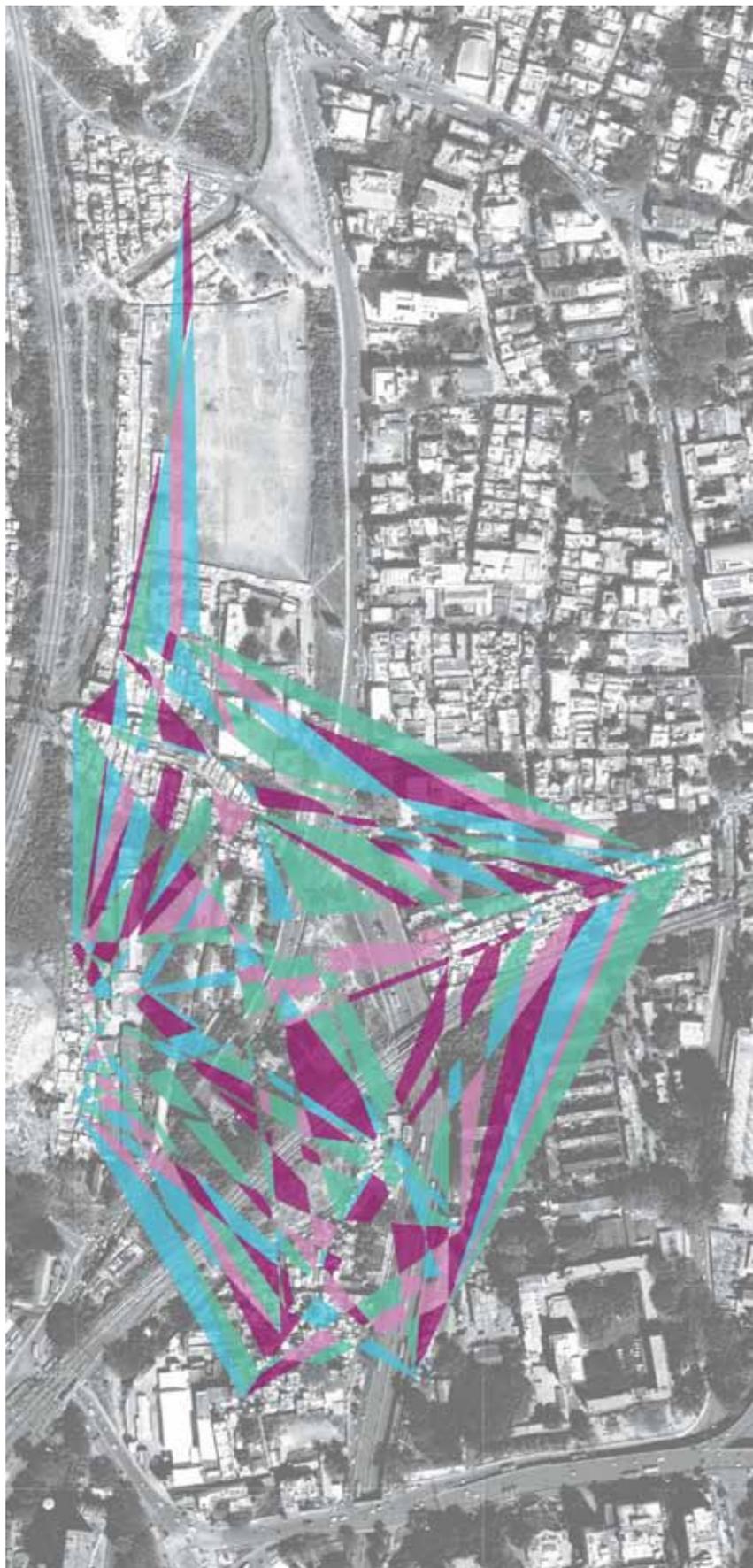
ADAPTATION

INCREMENTAL HOUSING (THROUGH ENABLING STRAT-EGIES THE INCREMENTAL HOUSING SCHEME EVOLVES WITH NO FINAL PRODUCT, BUT AS A FLEXIBLE ORGAN-ISM CHANGING WITH LIFE
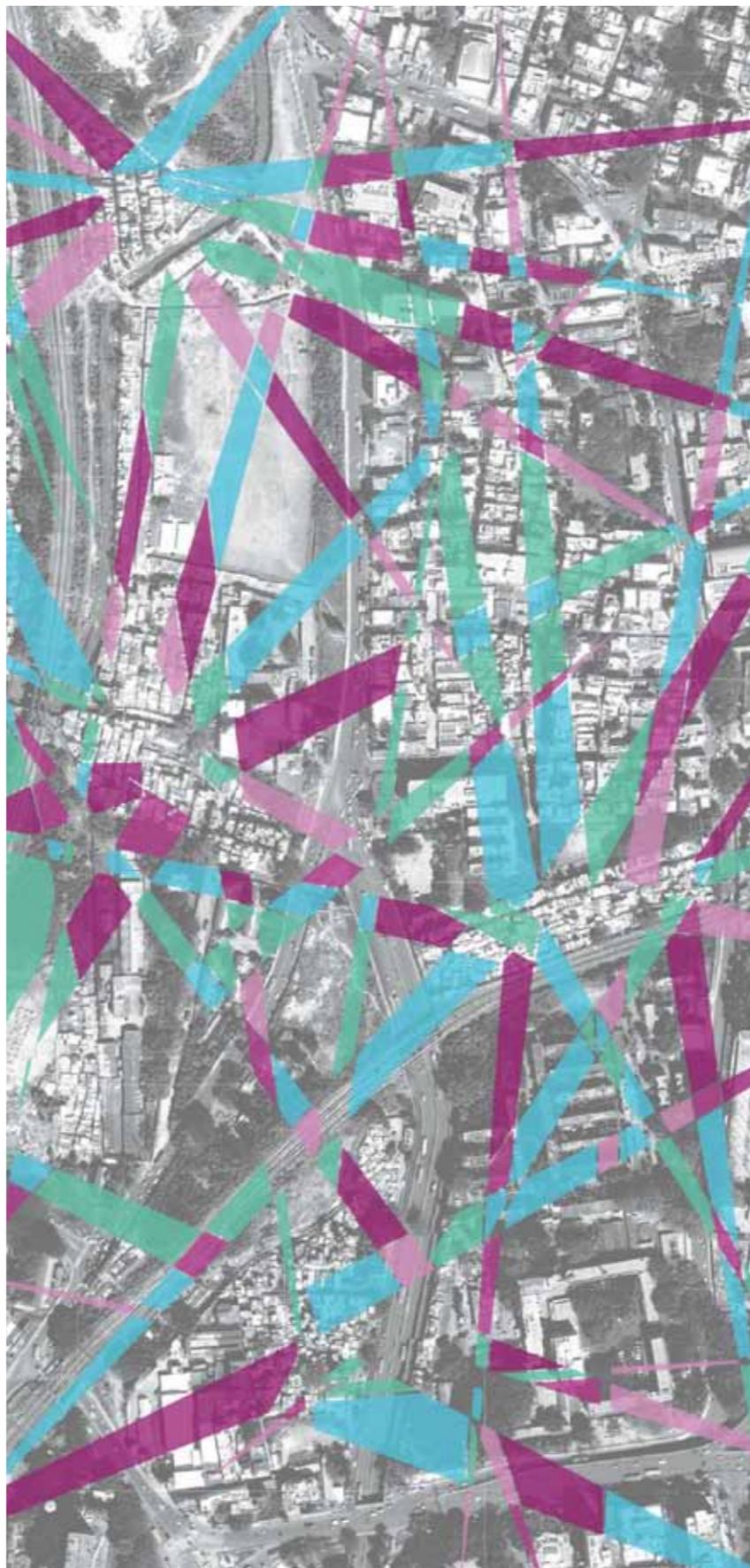
ELASTICITY

FRAMEWORK FOR NEIGHBORHOOD EXPAN-SION (AS BARRIERS ARE OVER BRIDGED, POS-SIBILITIES FOR SETTLEMENT EXTENSIONS ARE MADE IN SOUT-NORTH DIRECTION)

CONNECTING THE SLUMS

CONNECTING THE SLUMS WITH THE REST OF THE URBAN FABRIC

A SETTLEMENT EVOLVING OVER TIME
- A FLEXIBLE SYSTEM

As slums make up such a large part of India's cities, the way slum rehabilitation is performed is of huge significance for the future functions and appearance of tomorrow's India.

We proposes an alternative approach to the traditional methods of slum rehabilitation in India that, through a flexible and incremental process IN_SITU, incorporates the community into the formal city and makes the boundaries between the social enclaves smaller.

Cities are in constant change and should be allowed to perform these changes slow and considerate - with people and existing structures as the foundation rather than with non-site specific models. Unlike traditional slum rehabilitation in India today where whole settlements are demolished and rebuilt in a single step, the IN_SITU concept strive for an approach with many more steps; a flexible system where everyone affected has an influence and the ability to form their preferred housing along the way. These approaches aim to encourage commitment and trust among the slum dwellers, which is the basis for a successful sustainable rehabilitation, and a prerequisite for future governance and maintenance.

This considerate development over time presents an opportunity to take advantage of existing physical structures as well as social and cultural capital. The conventional way of performing slum rehabilitation is generally a waste of materials, as well as a misuse of established social and cultural structures. Most of all it is also a waste of the workforce and knowledge incorporated in the slum communities, and a patronizing way of saying that nothing in their neighborhood is worth saving.

The upgrading process is built up by two major concepts;

1 CONNECTION, LINKAGE, INTEGRATION AND FLEXIBILITY,
2 ADAPTATION, ELASTICITY

These are further divided into six main strategies, which together form an inclusive and site-specific slum upgrading proposal;

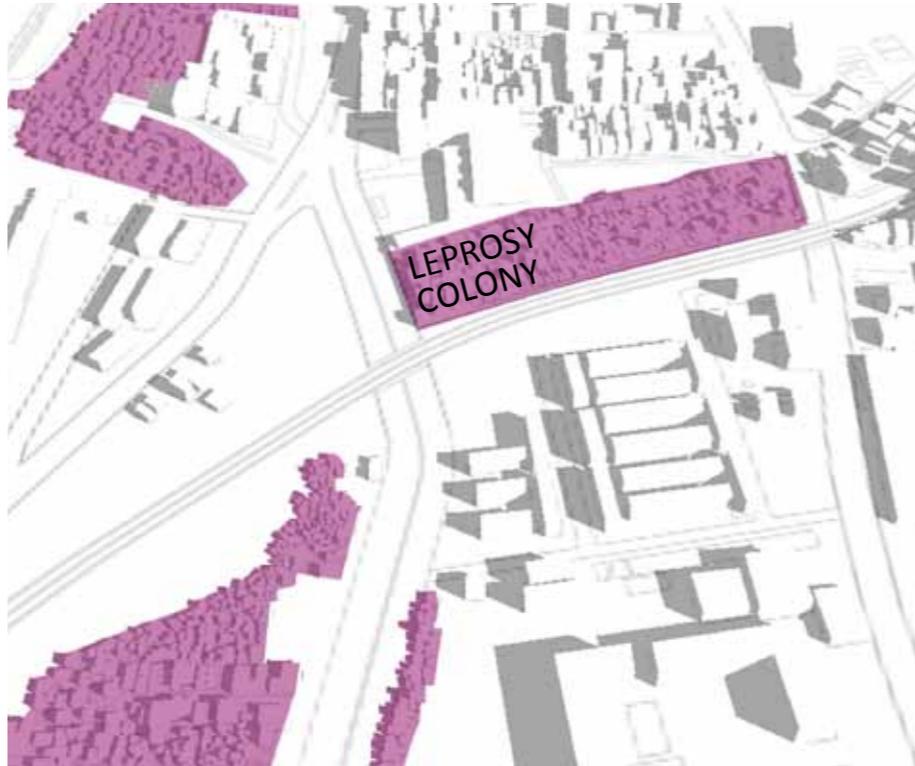· Improved connectivity
· Rail and road bridging structures
· Reinforced network of public realm

· A flexible anti-flood system
· Incremental housing
· Framework for neighborhood expansion

IMPROVED CONNECTIVITY

Connectivity plays a vital role in the life of a city, and people's movement in it. In a well-linked urban fabric, the life paths of city dwellers constantly cross and spontaneous meetings appear in the public realm. Today, Leprosy Colony and JWC Nagar are, just like their surrounding slums, extremely isolated from the rest of the city grid and completely disconnected from each other. The informal structures are in a parallel universe from the formal, only connected by informal paths and the main interconnection the railway constitute.

We therefore propose a functional network that connects the entire slum within, as well as linking the various slums together to form an interconnected network to one another. The network grows from inside and out, eventually linked to other important networks of the existing pavement city grid, as well as the citywide infrastructure. These are connections of many different scales. In the current situation the larger scale designed for cars dominates the surrounding area, repressing weaker connections like pedestrian paths. In Leprosy Colony and JWC Nagar as well as in the surrounding slums, however, the situation is different. Due to lack of space, these environments are mainly suitable for pedestrian traffic (and in some cases for a motorcycles or tuk-tuks). In Bangalore, and in many other parts of India, slums are thus unique areas liberated from the car's domination of urban space. We would therefore like to see these pedestrian small-scale paths as an asset to protect and further develop. The aim is to create a network of pedestrian paths connected to each other, sheltered from the car city, but connected to it. This is urban space for people to stay in without being separated from the rest of the city's urban structures. By enhancing the pedestrian city the proposal creates vibrant urban spaces where people of all social groups can meet and create links to each other and to

their city. The proposal involves a multifaceted road network that provides a wide range of choices of movement patterns that creates a greater degree of freedom of movement. This new physical interconnection of urban space will ease the daily life of slum residents, both for them to get to the surrounding city, as well as providing other citizens the opportunity to reach Leprosy Colony for commerce, thoroughfare or leisure. A well-connected area also plays an important role for the rest of the urban cityscape. Through improved connectivity within the slums and the other surrounding area, interconnection of the city as a whole is improved.

LEPROSY COLONY AND
ITS SURROUNDING SLUM
AREAS IN PINK

ROAD NETWORK WITHIN
THE SLUMS IN PINK

"FORMAL" ROAD
NETWORK IN GREY

PROPOSED IMPROVED
CONNECTIONS IN A
SLUM UPGRADING
PROCESS
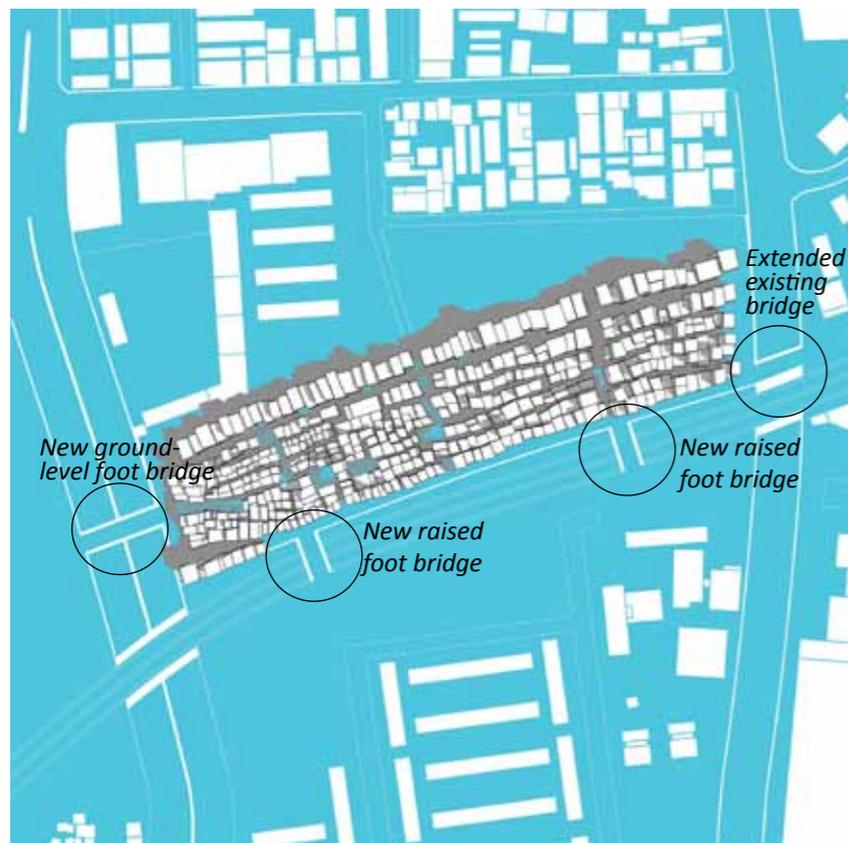
A WELL CONNECTED URBAN FABRIC

IMPROVED CONNECTIVITY WITHIN

Both Leprosy Colony and JWC Nagar have grown organically into a network of winding paths. It is often a long distance from origin to destination, simply because a house has intruded upon important connecting paths. With the goal of increased connectivity between and within the area, it is thus important to simplify the connections. The IN_SITU concept aims to open up existing paths so that they become more direct in order to increase accessibility. This means creating connections between different nodes in the area to simplify movement within the difficult urban structures of Leprosy Colony and JWC Nagar. To achieve this it is necessary for carefully selected houses in the area to be demolished. For this to be made possible a good relationship with the community is necessary to avoid problems of territory rights arising. The goal is to create a network of streets that allow for several alternative routes and connections. This includes both parallel roads, cross-connections and a reduction of dead ends. The improved connectivity will then open up the area to outsiders who are led into it through the main streets on both sides of Leprosy Colony and JWC Nagar. These become important lively commercial streets where the slum residents have the opportunity to expand their businesses.
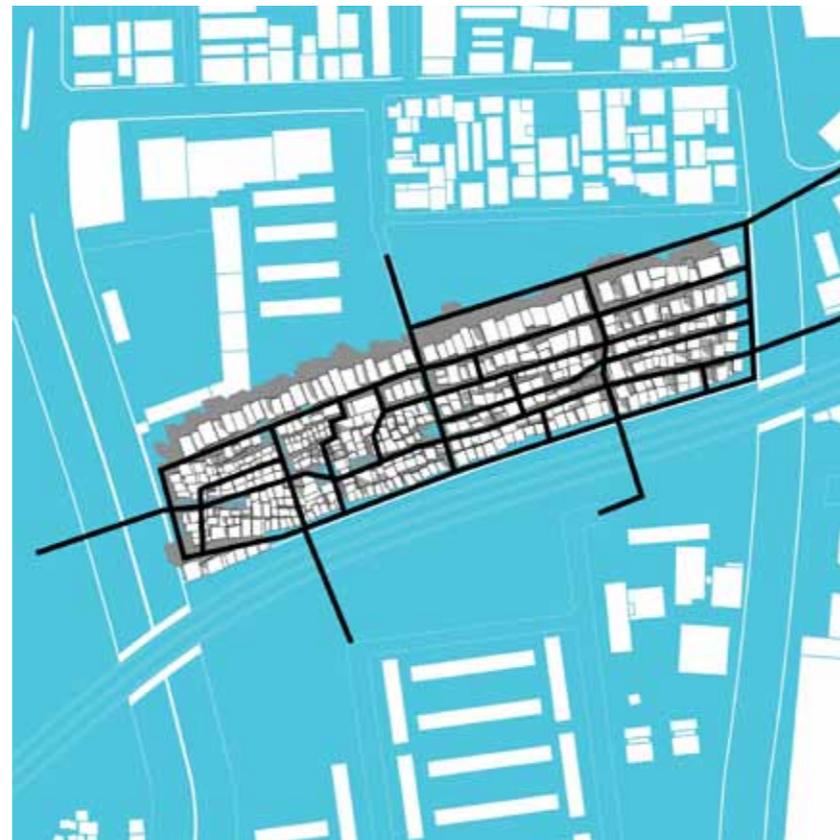

Existing main paths

Towards future Metro station

New walk along existing naala

Towards City Railway station

Towards central Bangalore

Towards eastern Bangalore

134

IMPROVED CONNECTIVITY LAYS THE FOUNDATION FOR AN EXTENDED NETWORK OF PUBLIC SPACES AND COMMERCIAL NODES.

NEW CONNECTING BRIDGES

Extended existing bridge

New ground-level foot bridge

New raised foot bridge

New raised foot bridge
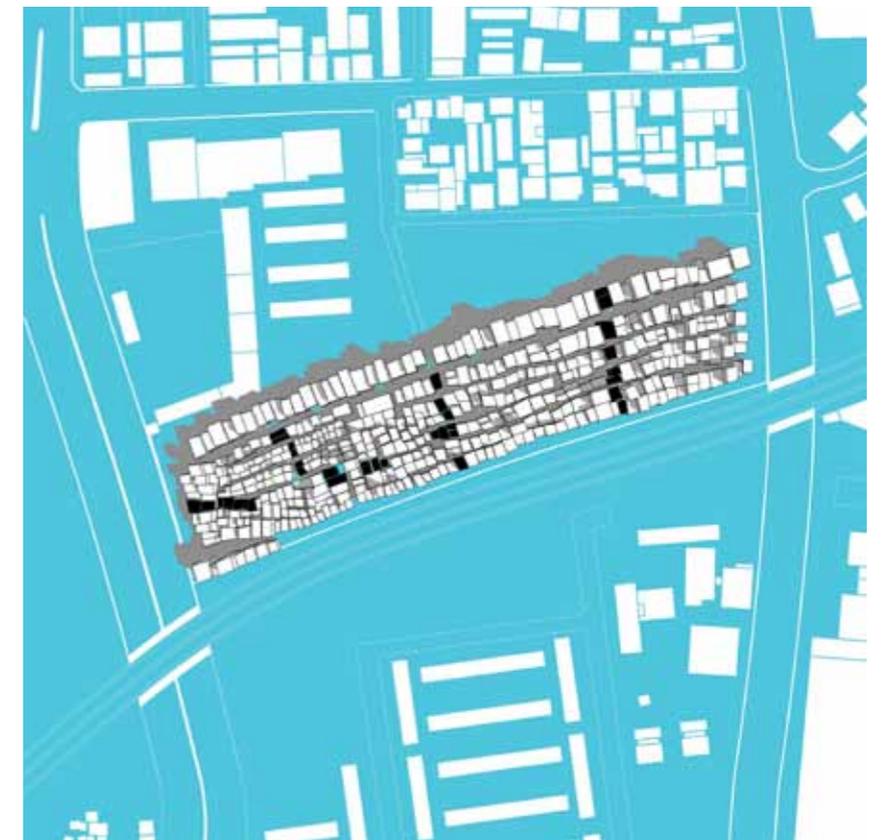
EXTENDED NETWORK OF PATHS FOR IMPROVED CONNECTIVITY

BUILDINGS ARE REMOVED TO OPEN UP PATHS

34 houses need to be demolished in order to open up the path system in Leprosy Colony and JWC Nagar. These are deliberately chosen as impermanent kaccha houses, which would have to be rebuilt anyway. As space is so scarce in Leprosy Colony itself, these houses will instead be erected on the south bank of the wasteland, south from the railway (see Framework for Neighborhood Expansion section below).

135

AN ALTERNATIVE USE OF THE JNNURM FINANCES PAYS FOR OVER-BRIDGING STRUCTURES

THE TRADITIONAL PROCEDURE for slum rehabilitation in India starts with money from the government; money especially set off for slum rehabilitation in form of the JNNURM scheme. Generally, the amount of capital put into the different projects is around RS 300,000 (USD 6,800) per household (Samuel, 2011). This was also the case in the Austin Town redevelopment performed by SPARC, and a similar amount is estimated to be put into the Leprosy Colony development (Samuel, 2011).

In some cases an NGO gets involved in the process by assisting with communal participation programmes or saving schemes prior to redevelopment. However, a governmental developer often performs the actual construction work in most cases. The result is generally a minimum-standard multi-storey solution on the location of the former slum, or on a relocation site.
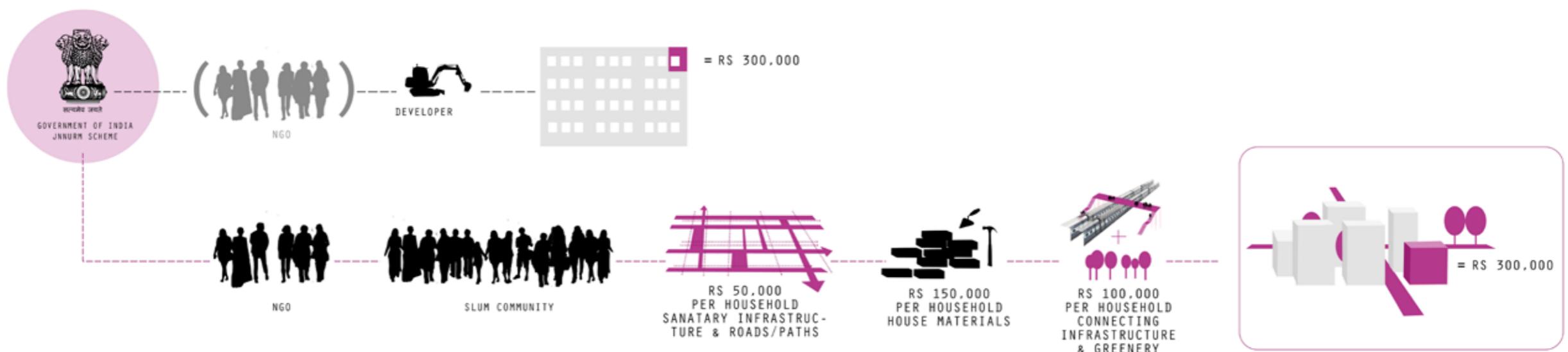
IN_SITU proposes instead an alternative use of the JNNURM money, and an unconventional development procedure. By supporting the slum community in a resident-steered upgrading process, less money falls between the chairs (to developers and under-consultants) and more capital reach the actual slum dwellers. Some construction work is done by consultants (such as

site-wide plumbing and electricity work), but house constructions are performed entirely by slum dwellers themselves, with support and education by an NGO. Materials are paid for by the JNNURM-scheme;
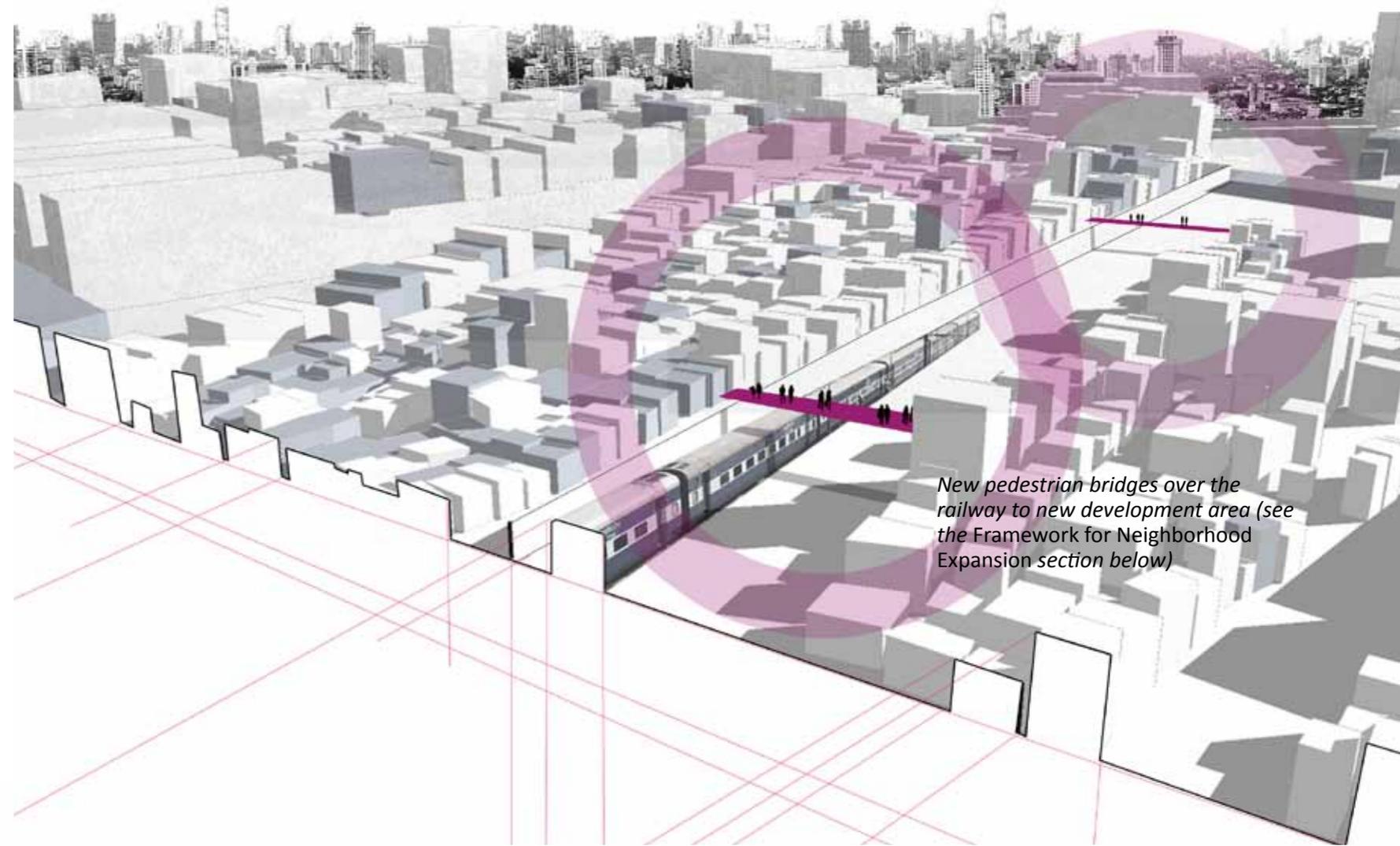
- RS 50,000 (USD 1,100) per household is put into the overall sanitation infrastructures and road/path improvements. This money should be more than enough for a well-made and properly installed sewage, water and road improvement-scheme, even with construction of a new open storm water system. Research along with a case project in India using the *Slum Networking* (see CHAPTER 3) approach showed that basic infrastructure (street paving, water and sewage) can be built for slum communities for only RS 12,000 (USD 270) per households. The Slum Networking approach was tried out for a large slum community in Indore City, India, where only RS 12,000 per household was spent on a complete infrastructure package (improved paths, water, sanitation). No houses were upgraded, but the infrastructure investments however lead to a major upgrading and investment from the slum community themselves, and

two years after the new and improved infrastructure was installed the slum was no longer recognized as a slum.

- RS 150,000 (USD 3,300) per household is put into construction materials for the slum dwellers' homes (either for total reconstruction or upgrading). This amount should also be a profusion of for the upgrading process of the homes in Leprosy Colony and JWC Nagar. The American report *Low Income Shelter Finance in Slum Upgrading* prepared for USAID and the Urban Institute examines the city of Nagpur, and possible ways to finance a slum upgrading scheme across the city. Due to the Nagpur Municipal Corporation (presented in the report) the cost of constructing new model homes in the city (of approximately 25m^2 in form of row housing or single/double-storey structures), would on average be RS 142,000 per household. In this project the homes were to be built by construction companies, and the cost of the raw materials ought to, quite likely, be substantially lower (Merrill et al. 2007). RS 150,000 should in other words be plenty for building materials for Leprosy Colony and JWC Nagar, especially since 40% of the homes in Leprosy Colony and even more in JWC Nagar, won't need a total rebuild but rather an upgrading.

GOVERNMENT OF INDIA JNNURM SCHEME — NGO — DEVELOPER — = RS 300.000

NGO — SLUM COMMUNITY — RS 50.000 PER HOUSEHOLD SANATARY INFRASTRUCTURE & ROADS/PATHS — RS 150.000 PER HOUSEHOLD HOUSE MATERIALS — RS 100.000 PER HOUSEHOLD CONNECTING INFRASTRUCTURE & GREENERY — = RS 300.000

● After these two basic provisions (housing and slum-internal infrastructure), RS 100,000 (USD 2,200) per household still remains from the JNNURM money. This capital will be used for added greenery in the slum and built structures to make the slum community integrated and connected to its neighboring areas. Such built structures are two pedestrian railway flyovers on the south side of Leprosy Colony and JWC Nagar, and two bridges running across the submerged roads on the slum's east and west side. The bridges and flyovers could be simple structures and still make a huge difference for the connectivity and safety in the area. At the moment the railway functions as a strong barrier, but also a massive accident hazard. In the absence of a proper crossing, people brave the danger of the open tracks and cross the tracks randomly along the settlement. As the number of train accidents is so high in India, there are great motives to secure these crossings. Along with the bridges should preferably also be education about the risks of crossing the railway by foot.
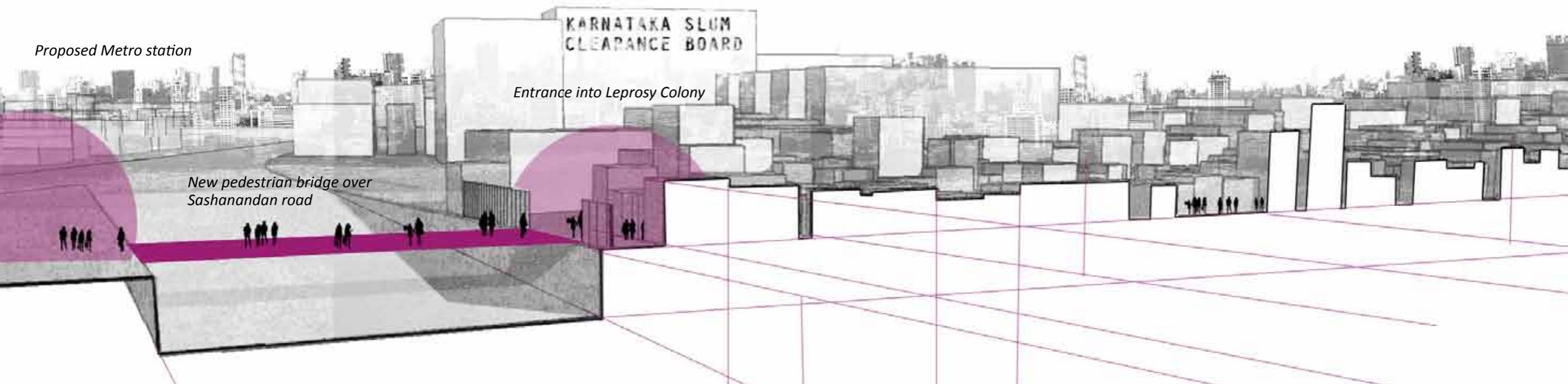

New pedestrian bridges over the railway to new development area (see the Framework for Neighborhood Expansion *section below)*

Proposed Metro station

KARNATAKA SLUM CLEARANCE BOARD

Entrance into Leprosy Colony

New pedestrian bridge over Sashanandan road
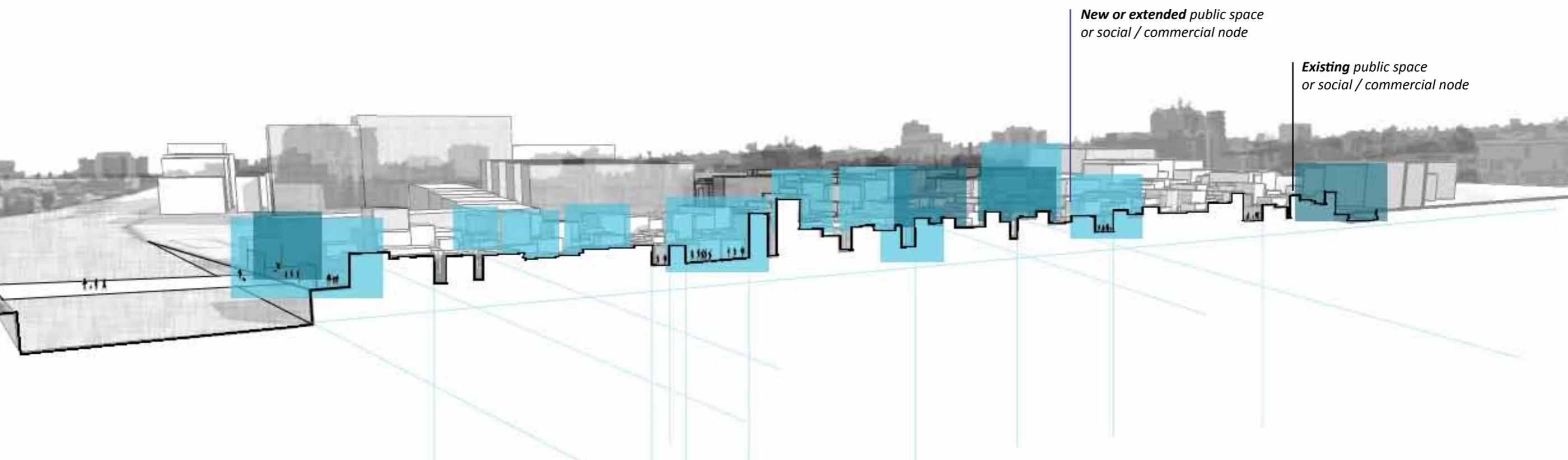
137

REINFORCED NETWORK OF PUBLIC REALM

New or extended public space
or social / commercial node

Existing public space
or social / commercial node

When access is improved and some buildings removed, the network of public spaces are extended. Many existing public spaces are enlarged and reinforced, and some new open spaces are created.

New or extended public space
or social / commercial node

Existing public space
or social / commercial node

Despite the heavy pressure on open spaces in Leprosy Colony and JWC Nagar, there are still a few open spaces to be found. They are however very limited in its sizes but fill many important functions for the slum dwellers, which is precisely why they are still kept open. The IN_SITU concept suggests enhancing these existing open spaces and their qualities while also introducing new ones. In some cases, well-selected houses needs to be torn down to make this possible. In other cases, vertical extension of a few houses may pave the way for more public spaces. Importantly though, is that the existing as well as new spaces retain their multi-functionality. By preserving their simplicity and not limit the areas to specific activities they can continue to fulfil a variety of needs as activity flow freely during the day just like they do in the present situation.

New open spaces on the edges of the area function as gateways where outsiders are invited in and brought together with the slum dwellers. These surfaces play a crucial role in tying the slum together with the surrounding urban fabric and thus fill a fundamental function in the goal of social integration. Along the

two new main streets new open spaces are also incorporated to have the same assembling effect. The open spaces further within the area still function as an extended part of the home and as spaces for the daily activities. These spaces are smaller and more intimate for the slum dwellers to easily connect with, and play a crucial role in strengthening the community feeling. By upgrading existing open spaces and introducing new ones, residents will hopefully continue working on further improvements of the area as a whole. As open spaces within Leprosy Colony and JWC Nagar solely have limited size even after upgrading, the proposal illuminates a great potential in the surrounding areas.

Leprosy Colony is today encompassed by large open spaces used by the slum residents for many different activities. Accessibility to these, however, is extremely limited, but with new connectivity, they will be more accessible. The proposal suggests that these should be seen as an opportunity for additional open space for the slum residents and thus must be preserved in future growth. Just as the open spaces on the edge of the area plays an important role in the integration, these areas will as well.

These new open space are proposed to follow the same pattern as within the slum, of smaller open spaces at regular intervals. Moreover, today's most important large open areas are expected to be kept open in the future as well.

The pressure on open spaces will still be ever present and there is of course always a risk that newcomers occupy new open spaces. However, there is already a community feeling in the area that sustains these spaces by the residents themselves. The upgrading will hopefully strengthen this community feeling and the residents may thus ensure that these surfaces remain open. Since the upgrading is carried out in close collaboration with the slum dwellers, this may also be areas that they feel an attachment to right from the start and thus further work to keep them open.

When access is improved and some buildings removed, the network of public spaces are extended. Many existing public spaces are enlarged and reinforced, and some new open spaces are created.

Through the redevelopment procedure, Leprosy Colony becomes more accessible for surrounding areas, and the foundations for enterprises will grow. Possibilities for ground-floor micro-enterprise and workshops are built into the new and upgraded structure. When the new Metro station is built across the Seshandri Road, only meters from Leprosy Colony, the conditions will also change drastically, and the possibilities for enterprise will grow dramatically.

A FLEXIBLE ANTI-FLOOD SYSTEM

Bangalore is known for its good weather. Compared to many other Indian states, Bangalore holds relatively low summer temperatures, and the monsoon delivers far less rain than other parts of India. Bangalore has an average of 934.7 mm rain annually. This falls mainly during a 6-month period from May to October, with its peak in September (WMO, 2011). Compared to Mumbai, Bangalore is fairly dry. The Mumbai monsoon delivers rain multiple times the Bangalore monsoon. For example, the July average rainfall of Mumbai is almost as high as the total rainfall of a whole Bangalore year. Compared to Sweden however, Bangalore could be considered very wet,

and especially if you compare specific months. During the wettest month in Stockholm (July) it rains 72 mm. In Bangalore, the wettest month of September releases 183.7 mm of rain over the city (WMO, 2011).

It is thus not very surprising that many slums in Bangalore, Leprosy Colony included, has major flooding problems during the monsoon. In Leprosy Colony there is an underground drainage system handling storm water runoff. However, the system is not proportionate to the amounts of rain that falls during the monsoon months, and major floods are thus the result.

existing river

naala

EXISTING CONDITION: *an old and under-used naala follows the northern edge of the slum settlement. It connects to a larger river system.*
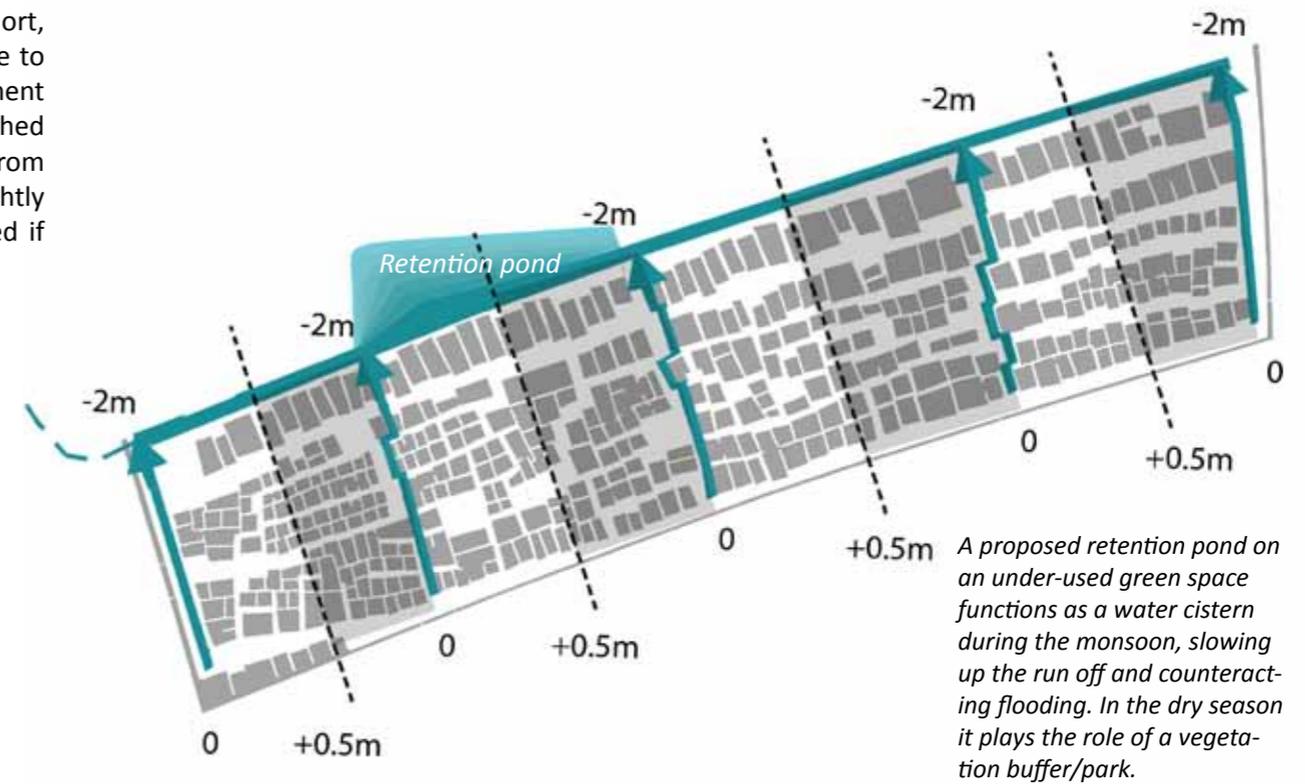
PROPOSED: *There's a natural fall north towards the naala throughout the settlement, but through-way for stormwater is blocked by buildings in the existing settlement. By creating a network of five open or semi-open stormwater channels, water is effectively removed during monsoon season.*

There is however great possibilities for a simple and sustainable open storm water drainage system on the site. An existing open channel (naala) stretches along the northern edge of the slum, and the whole settlement has a natural fall down towards this channel. As the slum is so exceptionally dense, the buildings are however obstructing the way of the water, and thus exacerbate the flooding problem.

By creating 5 new open storm water drains perpendicular to the naala, water could quickly be lead out from the settlement. This is done by building up the paths leading down to the main drains to a 2% fall. As the distances are quite short, a maximum of 0.5 m of ground level will have to be raised in some locations within the settlement to generate the fall. For new buildings (demolished kaccha houses) this raised level will be built from scratch. For permanent pacca houses, a slightly raised ground floor level could be constructed if necessary.

A proposed retention pond on an under-used green space functions as a water cistern during the monsoon, slowing up the run off and counteracting flooding. In the dry season it plays the role of a vegetation buffer/park.

Connecting greenery through Leprosy Colony and JWC Nagar

GREENERY AND URBAN FARMING

Greenery on the south and north sides of Leprosy Colony and JWC Nagar is proposed to be connected through the slum by tree plantations along the storm water channels, creating green spines in the new north-south links. The trees easily receive water in the hard urban environment, even during the dry season, since they are connected to the storm water swales. As these spines are also largely connected to the slum's major public open spaces, there are great possibilities for community-oriented, small-scale urban farming.

143

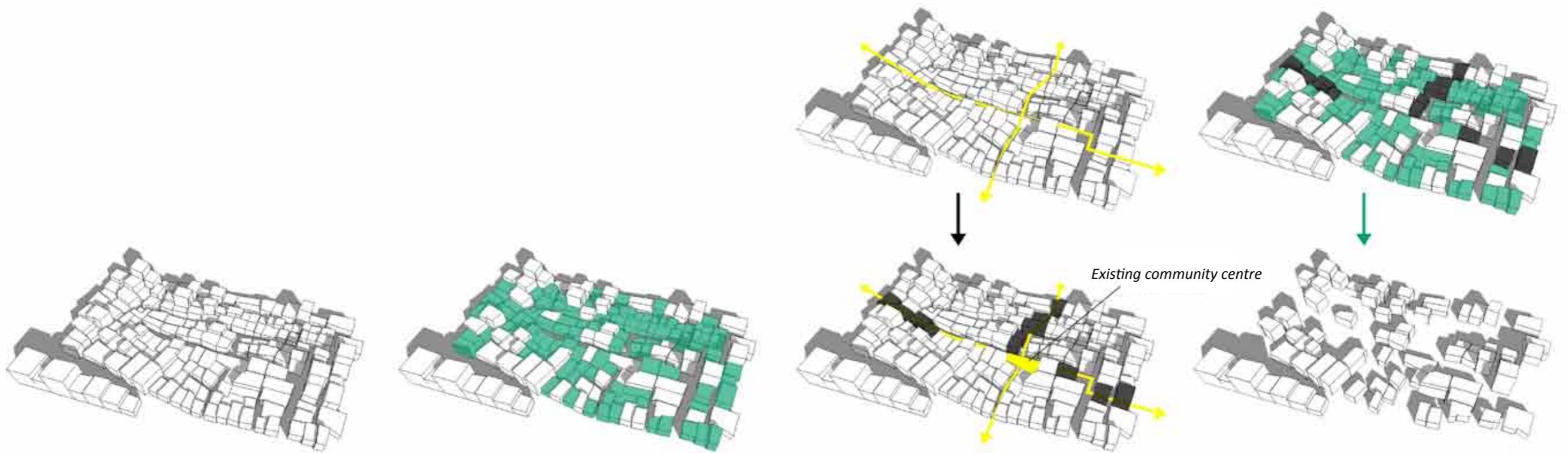Five south-north running stormwater swales are created through the widening of paths in Leprosy Colony and JWC Nagar. The new stormwater system with open gullies is simple but efficient, and takes its departure in the existing landscape. Trees and urban agriculture can be added along these paths as they are the low points of the slum and thus the wettest places. Renderings showing one swale during dry season and monsoon.

INCREMENTAL UPGRADING
OF HOUSING STOCK
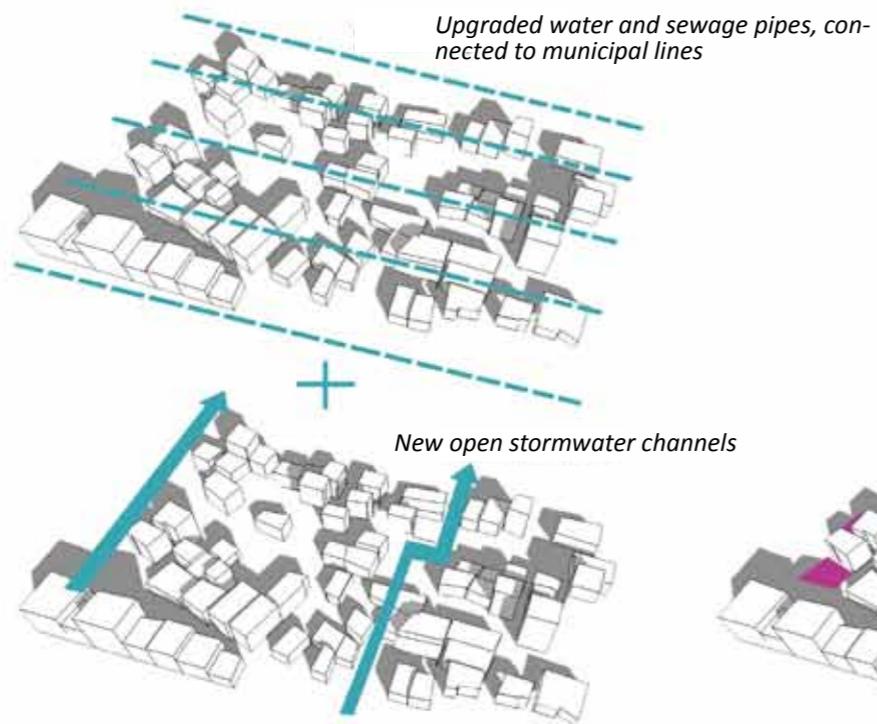

Existing community centre

EXISTING BUILDING STRUCTURES
OF LEPROSY COLONY

STEP 1:

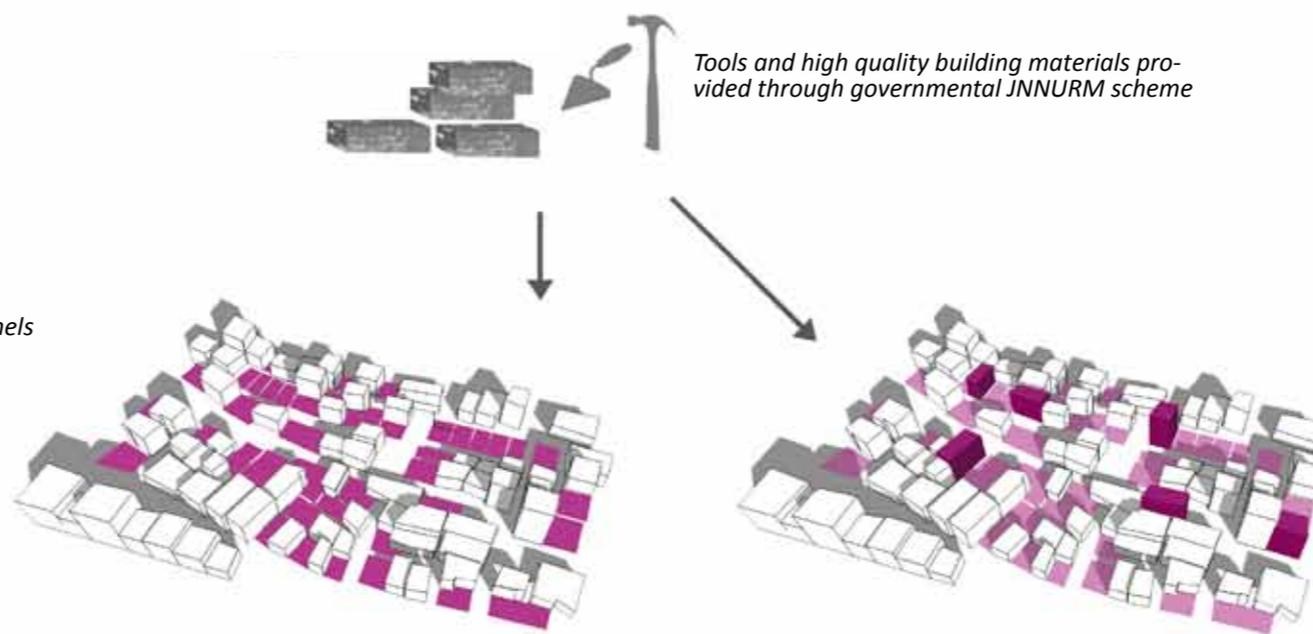IDENTIFICATION OF IMPERMANENT
STRUCTURES (KACCHA)

STEP 2:

IDENTIFICATION OF HOUSES TO
BE REMOVED FOR CONNECTIVITY
AND ACCESSIBILITY

STEP 3:

NGO LEAD+COMMUNITY PER-
FORMED DEMOLISHMENT
OF IMPERMANENT(KACCHA)
HOUSES, INCLUDING HOUSES
OBSTRUCTING ACCESS POINTS

Upgraded water and sewage pipes, connected to municipal lines

New open stormwater channels

Tools and high quality building materials provided through governmental JNNURM scheme

STEP 4:

GOVERNMENTALLY STEERED UP-GRADING OF SEWAGE SYSTEM AND CONSTRUCTION OF NEW OPEN STORM WATER CHANNELS

STEP 5:

NGO LEAD+COMMUNITY PER-FORMED HOUSE FOUNDATION CONSTRUCTION ON THE EMPTY PLOTS (THE SMALLEST PLOTS ARE EXTENDED)

STEP 6:

THE COMMUNITY BUILD NEW HOUSES ON THE NEW STABLE FOUNDATIONS, OR UPGRADE THEIR ALREADY PERMANENT HOUSES. THE PROCESS IS SLOW OR FAST DEPENDING ON EVERY INDIVIDUAL FAMILY´S ABILITY AND TIME.

Instable structures (Kaccha)

Existing houses removed for connectivity

House foundation construction

Demolished houses

Water, electricity, (sewage)

One-storey structure

New house

Future expansion possibilities

Upgrading of permanent house

New public space

New public space

Leprosy Colony and its surrounding neighbourhood are similar to many other slum areas developed over time through different processes of change. Slum residents have had time to develop their housing situation to suit their needs in line with what their economy allows, therefore, this kind of development suit slum dwellers much better than today's rapid rehabilitation based on slum demolition. An incremental housing process embraces this development over time by gradually improving already existing urban structures, IN_SITU. The advantage of this approach is the fact that it is flexible and changeable depending on social and economic conditions, while also taking into account local natural conditions. At the same time it is a humble way of taking care of already established social structures and communities that play an extremely important role in a sustainable future development.

The IN_SITU concept take advantage of already existing structures as many houses in Leprosy Colony are of good quality. When talking with residents, it becomes clear that many prefer to keep their houses rather than having it torn down. The permanent houses will be identified along with the houses that are in need of reconstruction.

The houses in need of reconstruction will be demolished and solid foundations for future houses to which basic necessities (water, sewage, electricity) are connected are built in its place. This foundation will quite easily be extended to a habitable one-storey structure by the slum dwellers, with the use of materials provided through the JNNURM scheme and guidance from an NGO. The simple single-floor structure will eventually also be able to grow to a two or three storey house based on its owners' needs and economic opportunities.

The sewage connections can be done in various ways depending on community's needs and availability to connections to municipal lines. Weather the toilets would be waterborne or earth closets could be investigated further when finances and site specific conditions are explored in detail. The way we use fresh water by flushing our toilets in the west is not a sustainable, long-term solution, and international research is constantly exploring alternative ways. The *Eco-Sanitation Toilet* presented in CHAPTER 2 could be a good solution, giving back the asset of fertile soil to the community to use for farming.

It is important that the first phase of the house can work for itself before future additions are made. Furthermore, the unfinished floors contain or are ready for the plumbing, wiring, structural configuration and duct-work for future growth. When the economical situation is improved for the residents and the need for a larger accommodation increases, there is an opportunity for the home to grow.
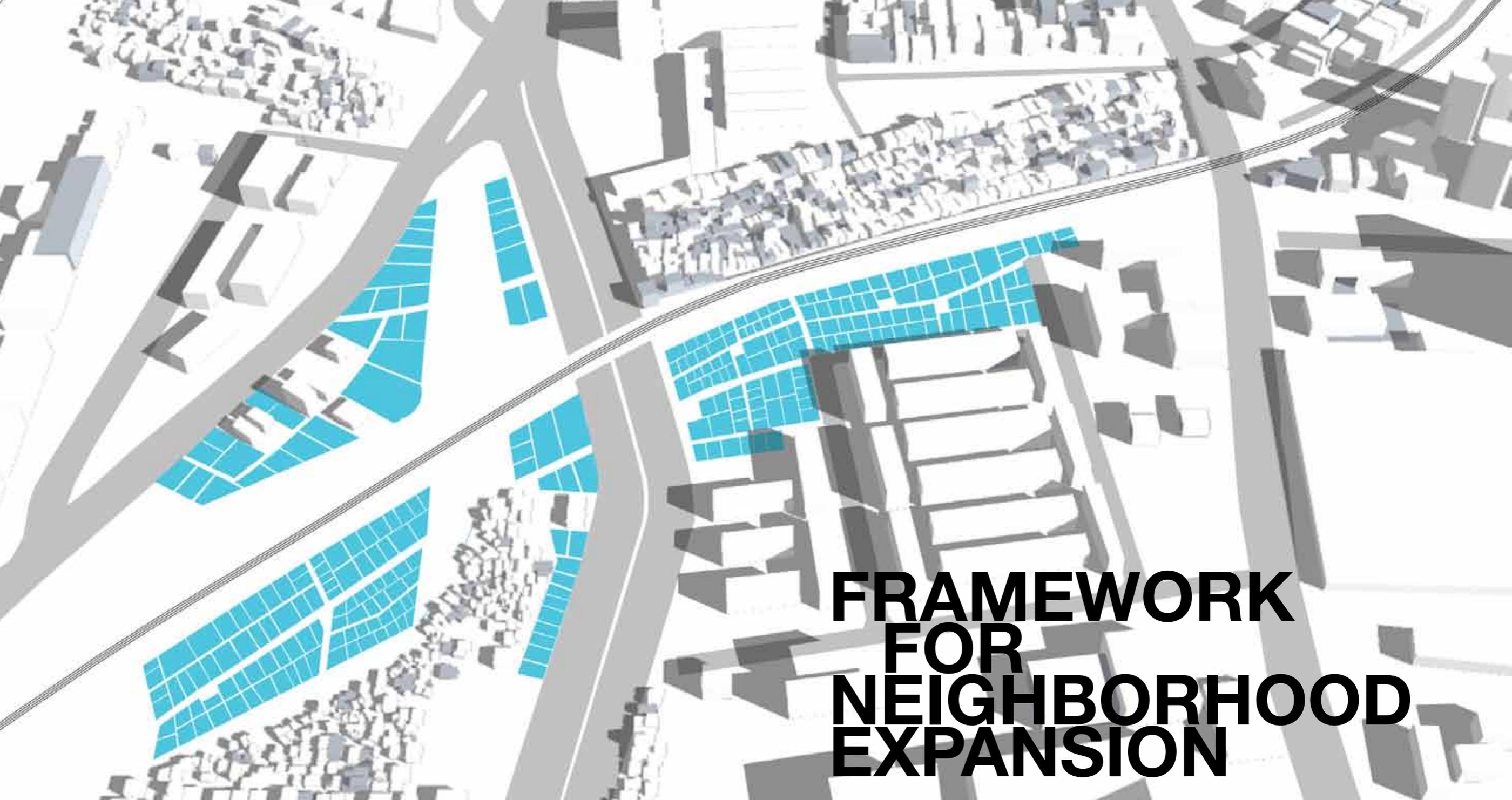
By building the house in many more phases than one, as in most slum rehabilitation, the costs are also reduced. This is partly because it takes its starting point in the small scale with one floor that can grow further in the future, and partly because it is built on a small lot. This strategy further reduces the ecological impact and material costs as local materials are used.

An essential factor of this part of the proposal is slum dwellers involvement in the project. From the very beginning the slum dwellers are to be invited in as participants in the process of development every step of the way, both in the design process as the actual construction. Even if some people for various reasons are unable to participate in the process of construction, there is a tremendous capacity in the community to take advantage of. Within the framework of the proposal, residents therefore get the opportunity to expand their knowledge on construction techniques to be able to build their homes. The houses are built in the first stages by house owners themselves and can then be further developed based on needs and financial resources of the same owner. Moreover, these developments are much more socially sustainable when it is developed in close cooperation with residents and their needs, and thus a longer perspective will meet residents' needs. This is also a way to give power to the slum residents to change their environment to suit their own needs. Residents' demands are met because they themselves are able to bring the development in a desired direction. In this way residents themselves can determine what use their home should have. For example, today in Leprosy Colony there are a few small business, but in course of future development, the possibility for this kind of activity increase, therefore, many people will probably in an upgrading also build space for business.

The incremental housing process is changing the settlement slowly, allowing people to upgrade or rebuild their homes in their own speed and in their own ways.

FRAMEWORK FOR NEIGHBORHOOD EXPANSION

PLOT DEVELOPMENT AROUND LEPROSY COLONY:
A STEP TOWARDS A 'SLUM – FREE' CITY?

The Government of India has a goal to become a slum-free nation. Prime Minister Manmohan Singh has launched the *Rajiv Awas Yojana* (RAY) scheme, which aims to improve the lives of the millions of slum dwellers currently residing in India (The Hindu, 2011). In order to reach this goal, big interventions must be made. Today, there is a major focus on 'first-aid' actions (like slum rehabilitation) but generally weaker strategies for slum prevention. The problem in many urban areas is that poor people cannot afford proper accommodation and therefore squat on public or privately owned land. The possibility for these to get access to legal land is therefore a vital key factor for long-term prevention of slums. If a wider strategy to enable these people to legally buy or lease small pieces of land where basic

The plots could be prepared for parcelling in different sections, with foundations for sewage, runoff, electricity and water attached to the site.

infrastructural services such as water, sewage and storm water systems already is founded was available, some slums might be prevented from evolving. The investment of a plot is, however, often the biggest cost and the hardest burden for poor people. However, the equation is quite simple; the smaller the plot - the cheaper the price. If land is owned by the government, it is possible to regulate the price further. Strategies with small plots makes it possible for low-income groups to become equal participants on the housing market and included in the urban fabric, which is a way for them to legally move onto the real estate ladder.

Research shows that perceived security of tenure boost investment in the housing (Payne, 2000). As people are able to build their house on a legal plot rather than on occupied land, there's thus a good chance for greater investment by these people in their living, as they know they cannot be evicted. By dividing left-over or under-used land in the cities ('urban infill') into plots of varying sizes, poor people can be offered more secure and higher-standard of life. The plots should be of various sizes, but in generally very small, in order to really be an option for poor families. As some plots are slightly larger, the area is likely to still attract people from various social groups, but evade large-scale developments or major speculation.

This strategy could be applied on the areas around Leprosy Colony and JWC Nagar. To ensure that the surrounding areas develop to integrate rather than segregate, a wide-ranging approach is required for these areas. Through the comprehensive plan, the near-by under-used areas could be marked for small plots, preventing future large-scale development projects that could push low-income residents away from the area. This approach would link Leprosy Colony, JWC Nagar and nearby low- income settlements together in a pedestrian-friendly spine, as well as preventing island-formations in the entire area.

The plots could be prepared in different sections, with foundations for sewage, runoff, electricity and water attached to the site, following each section's parceling, and then offered to anyone interested in buying it or signing an inexpensive long-time lease. The various sizes and small-scale approach would embrace the slum's smaller semi-private public space that opens up the urban fabric.

ROADS AND PEDESTRIAN PATHS

FUTURE VISION OF PATHS AND ROADS CONNECTING LEPROSY COLONY AND SURROUNDING AREAS, INCLUDING THE AREA AROUND THE FUTURE METRO STATION. THESE COULD HOWEVER BE DEVELOPED IN PHASES AS THE PLOTS ARE SOLD AND DEVELOPED.

CONNECTING GREENERY

VISION FOR A FUTURE CONNECTED GREENERY SYSTEM, BASED ON EXISTING GREENERY AND OPEN SPACES. THE RAILWAY BECOMES A GREEN BUFFER ZONE TO CLOSE BY NEIGHBORHOODS. A GREEN STRIP ALSO CONNECTS SOUTH-NORTH ALONG THE FUTURE METRO LINE, AND TIES THE EXISTING RIVER IN THE GREEN LINK.

POSSIBLE SCENARIO:

2013 PHASE ONE OF PLOT DEVELOPMENT

SINCE SOME HOUSES NEED TO BE DEMOLISHED WITHIN LEPROSY COLONY AND JWC NAGAR TO MAKE ROOM FOR PUBLIC SPACE AND ACCESSIBILITY, THE SLUM DWELLERS OF THESE HOUSES WILL BE RELOCATED ON THE OTHER SIDE OF THE RAILWAY. THE FIRST PHASE OF THE DEVELOPMENT IS TAKING PLACE AROUND FUTURE CONNECTIONS NODES; THE RAILWAY BRIDGES.

NEW STREETS, PATHS AND PEDESTRIAN BRIDGES ARE BUILT TO CONNECT THE DIFFERENT AREAS, AND THE NEW ELEVATED METRO STATION IS ALSO UNDER CONSTRUCTION

2018 PHASE TWO

NEW DEVELOPMENT IS TAKING PLACE ON THE DEMARCATED PLOTS AROUND THE RELOCATED FORMER SLUM DWELLERS. CONSTRUCTION IS ALSO GOING ON AROUND THE METRO STATION, WHICH IS NOW FINISHED AND IN USE.

2023 PHASE THREE

FURTHER DEVELOPMENT IS TRANSFORMING THE AREAS AROUND LEPROSY COLONY.

2028 PHASE FOUR

FURTHER DEVELOPMENT IS TRANSFORMING THE AREAS AROUND LEPROSY COLONY.

A CITY WIDE STRATEGY

Bangalore is a rapidly growing city with an estimated population of 10 million people in 2021 (Dittrich, 2007). Among these are, of course, also poor people seeking a better life in the city. Even if India were to succeed in upgrading all existing slums today, new ones will arise and strategies to tackle them is needed. By focusing on a more inclusive planning, problems could be solved before they even become problems.

The strategy of small plots, proposed for the surrounding areas of Leprosy Colony, could be applied in the larger urban scale of Bangalore too. Applying this approach to the city as a whole would definitely break conventional urban planning methods, previously creating segregating city structures, and the benefits are many to gain for the city seen in its entirety. With a variation in plot sizes this strategy would open up for social diversity, reduced segregation, functional mixture as well as an aesthetic mixture; simply opportunities for a more varied urban landscape. These positive factors may then have an impact on each other; more aesthetic mixture likely creates a social mixture, which then affects the functional mixture, etc. Of course, the forces behind slum developments are extremely complex and this strategy should thus be seen as one of many solutions.

One of the strengths of this approach lies in the possibilities for public participation in the process, which is generally quite absent in Bangalore and India, where the widespread corruption have created a mistrust against authorities. Through this strategy people can be involved in a development they previously would see as impossible to change, and create a city which meets their needs. Moreover, as this strategy make communities stronger, it becomes more difficult for existing powerful forces within the city to force out the poor from the attractive city centres. The IN_ SITU strategy can also play another important role in the rapidly growing city. Important public spaces are often deleted from the urban fabric or absence in new developments in the uncontrolled growth. By a strategy similar to that of Leprosy Colony, however, these surfaces can be secured.
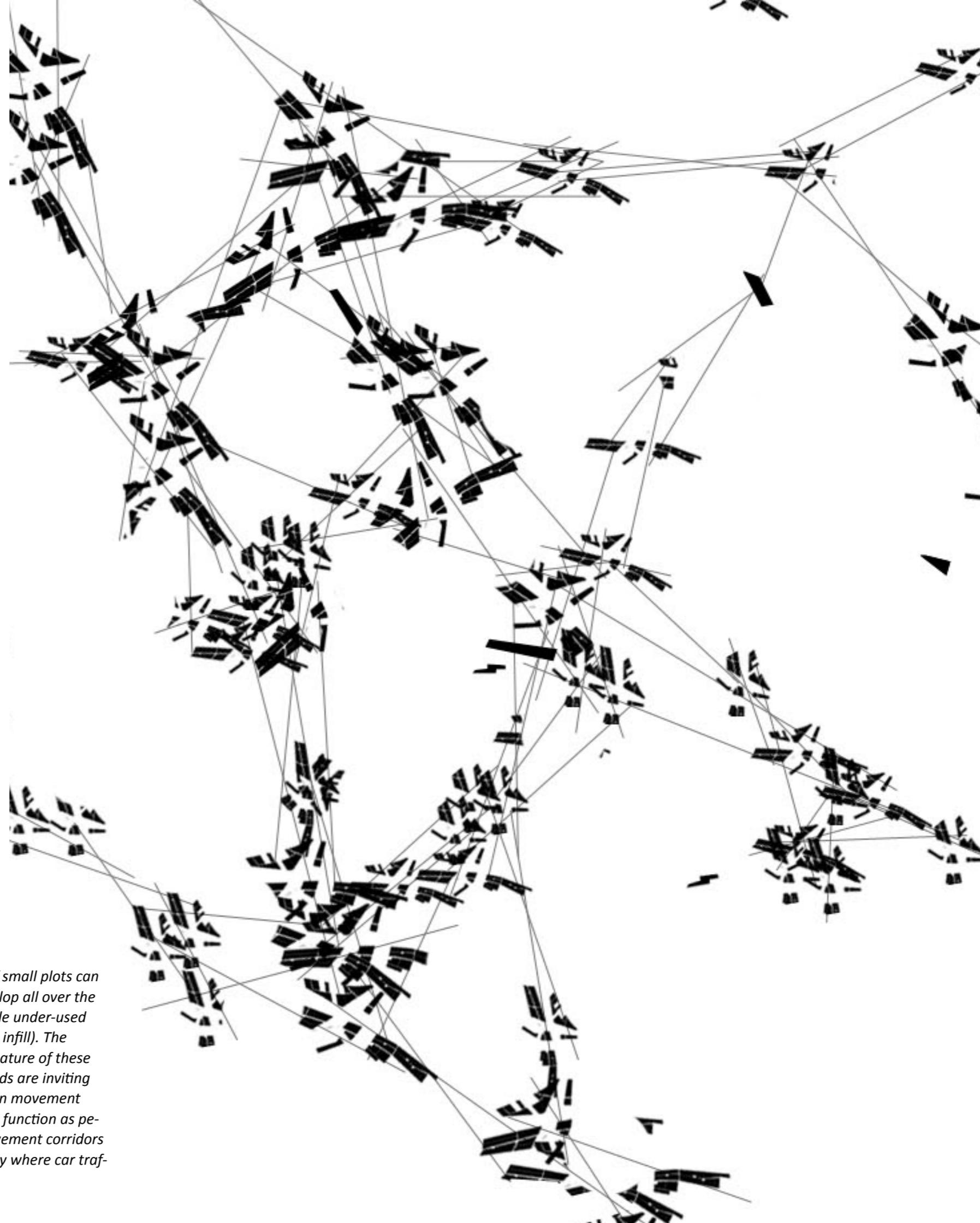
Although Bangalore is a rapidly growing city and there is a lack of

space in some areas, this is not the case for every single section of the whole city. Leprosy Colony's surroundings are an example, with large under used spaces and wastelands, even though it is located in the city centre. It is instead about what to prioritize and how to effectively use the space available. Of course, critics can argue that public land in desirable areas could be sold and the money used to improve services for low income earners on some other less valuable land in the city, but then they miss the bigger picture. The fact that the further out in the periphery they are removed, the further from services and jobs they end up. Even if the initial cost of land is lower in these locations, other expenses are added due to the remote location. In some cases the new locations are so unfortunate that people are driven back to central slums again. This approach *undermines* instead of supports the social, environmental and cultural values of an inclusive city.

A network of small plots can by time develop all over the city in suitable under-used areas (urban infill). The small-scale nature of these neighborhoods are inviting for pedestrian movement and can thus function as pedestrian movement corridors through a city where car traffic is norm.

COMPARISON BETWEEN SWEDEN AND INDIA

The theme of this thesis can perhaps seem far from the reality and every day work of a Swedish landscape architect. Sweden is a rich, western country without slums, with a social safety net that saves most people from a life of total poverty and homelessness. Issues of slum rehabilitation are unlikely to arise in the work of a landscape architect in a Swedish municipality or architectural practice, and as an old socialist country, Sweden demonstrates a relatively high degree of equality between income groups, where the span between the poorest and the richest is much smaller than in India. India is extreme in that sense; the deep poverty is widespread and always present, but the country simultaneously holds over 150,000 millionaires, positioning India on the top twelve of countries with the largest population of 'high networth individuals' (HNI) in the world (Indian Express, 2011).

Urban planning in India is to a great extent moving towards a segregating urban fabric, promoting a strong fear for the unknown or the "different". Bangalore is a good example of these tendencies, where gated communities are common phenomena and shopping malls are protected by armed security guards. Just a simple look at an aerial photo of Bangalore reveals a fascinating division of enclaves; of exceptionally dense slums, and of lush middle-class communities. As discussed in CHAPTER 5, there is an inherent risk in this social segregation of creating a vicious circle of fear and insecurity; leading to more fear and insecurity; leading to more fear and insecurity.

The urban fabric of Sweden is very different from the prevailing one in India, and mixed use and social integration has been a guiding star in urban planning for decades. However, things are changing and new movements, much less forceful and evident than the ones in Bangalore but still strikingly similar, are emerging in the Swedish city. *BoTrender08*, a Swedish survey completed by Tyréns Temaplan, reveals that one out of three Swedes wants to live in a gated community or an "extra safe area". Among young adults, this number is as high as 41% (Tyréns Tempelplan, 2008). Göran Cars, professor in urban planning at the Royal Institute of Technology, finds these trends quite alarming and a sign of a new movement in Swedish planning, built on fear. He describes these closed housing forms as potential threats to an open and inclusive city, and draws parallels to the United Stated and South

Africa where gated communities are common structures, and cities are far more socially divided than its Swedish counterparts (Cars, 2011). Malmö in southern Sweden, often depicted in media as a problematic and segregated city in terms of social divides and ethnic groups, is home to Sweden's first "gated community"; Victoria Park. The enclave in the southern outskirts of the city offers middle to high income housing in a "safe resort" environment around a communal park/pool area, and is inspired by American precedents. A low wall encloses the area to prevent incursion of unauthorized individuals, but a public restaurant and spa establishment still allows public activities to some extent. The differences from many strictly closed American or Indian gated communities are clear, and Catarina Persson, sales manager at Victoria Park, doesn't even want to call it 'gated' (Persson, 2011). However, it is an apparent step towards a more secluded and segregated living environment. And although it is a very modest "Swedisized" form of a gated community, Cars believes warning bells should ring. When service that used to be public is closed in behind locked doors the same services disappear in the city. Of course only one Victoria Park will have little effect, but if this style of living one day becomes standard for the middle class like in other parts of the world, he sees a risk of diminished public service. This is not a completely unimaginable future scenario, as the BoTrender08 report discovers a big interest in this type of accommodation, and Persson predicts an increase in similar developments as Victoria Park in a near future in Sweden. She says the interest for Victoria Park has been enormous, and the safe and easy-living "all-inclusive" concept attracts people of all ages (Persson, 2011). Also Cars considers that these developments will arise in many Swedish cities in the future, partly as a consequence of a perceived fear of the city's "unknown", and people's strive for safety. In England these trends can be seen in 'turbulent' cities with strong social differences, such as Newcastle, which makes Malmö a natural first city for this to occur (Cars, 2011).

Besides Sweden's first gated community, Malmö also have what is often described in media as one of Sweden's most problematic suburbs and a product of the Swedish Million Homes Programme; Rosengård. Any person reasonably familiar with Malmö knows of course that the use of the word "suburb" in this case is completely erroneous; the only thing separating Rosengård from the inner city is a railroad, anyhow the social divide is as big as the Pacific Ocean. In many ways Rosengård fights against the same forces as Leprosy Colony in India, not that Rosengård in any way is similar to the informal structure of a slum, the strong similarity lies in the

fear of Rosengård as the unknown. This is the same fear we saw of Leprosy Colony, and just as in Bangalore, the social barriers has its firm grip around Rosengård. In recent years the discussion of the complex problem of segregation has been intensified in Malmö. The problem with the discussions in Sweden, just as in India, is the major focus on how Rosengård could be integrated in Malmö, not vice versa.

With the background of these first stumbling urban movements in Sweden, it is clearer to see our curiosity for a study of a city like Bangalore, and how these studies of social segregation and fear, are actually relevant even in a Swedish perspective; especially for us as urban planners. The case of slum rehabilitation should however also be relevant for every single person on this earth, weather born in Bangalore or Malmö, since every seventh of us humans actually live in a slum settlement. The dilemma of slums is crucial for the well-being of one billion people – a group of people equivalent to the total population of the United States and Europe combined. Research aiming to solve this issue is critical and should be in constant focus. An important aspect often forgotten in the discussion of slum rehabilitation in India (which is mainly centred on how the living conditions of today's slum population can be improved) is however how the need for future slums can be prevented (Payne, 2005). This issue is major and could not be covered completely within the framework of this thesis. However, we thought a lot about this and about slum prevention, and our strategy of development of small, cheap plots as urban infill, is a small step in this direction. What we call for in India, as well as in Sweden, is solutions that encompass the whole urban city structure to treat the symptoms of segregation and fear before it breaks out in a disease.

REFLECTIONS ON PROCESS AND RESULTS

Our process started in Sweden a few months before our field trip to India in order to prepare ourselves for what ought to come. By literature studies we tried to achieve an all-embracing picture of the country and the city we would soon be working in, and at the same time we sought to understand the forces behind the rise of slums and how slum upgrading in India was performed. The fact that we gave that introductive literature part of the process quite a lot of time was, when looking back, important.

"An accommodation extra all"; Victoria Park in Malmö marks a new trend in Swedish urban planning, similar to the urban development of Bangalore.

Rosengård in Malmö fights, in many ways, against the same forces as Leprosy Colony in India. Not that Rosengård in any way is similar to the informal structure of a slum, the strong similarity lies in the fear of Rosengård as the "unknown".

We were told several times that "it is impossible to be prepared" or "you never know what will happen" and to these claims, we agree fully. Of course much of what was written during those first month was discarded eventually as we narrowed down our aims and focus. Much happened in India that we could never have foreseen, and twists and turns in our process changed our plans multiple times. Thanks to our pre-knowledge we could however more easily steer and handle those problems and unforeseen events. Throughout the work on this thesis, we have learned that the issues of slum rehabilitation are multifaceted and complex. Nothing is black or white when it comes to the slum situation in India – there's always another side of the coin and there are never anything as simple as problem > solution. The same goes for our experience of India; a giant country, seven times larger than Sweden, with a population growing by every heartbeat. A country of extreme contrasts, tastes and colors where the dissimilarities between those who have plenty and those who have nothing are enormous, is obviously extremely hard to fully understand and grasp.

During our time in India, there's was an inevitable, sneaking sense of hopelessness striking us once in a while when we were told that there's no way to the top of the social ladder for a poor slum dweller; "if you are born poor in India – you die poor or engage yourself in criminal business" was a statement we had repeated to us several times. Working on a slum rehabilitation proposal, you however have to believe you can make a difference, and by looking at the work of some NGOs, it is evident that difference definitely can be made. SPARC's work in Pune or the upgrading of Mumbai's Leprosy Colony are examples of how lives of slum dwellers can go from very poor and marginalized in the society, to equal participants on the housing market and people with

incentives to invest in their future, and with hope and optimism. The deeply rooted corruption is also a very frustrating fact to accept when working in a developing country like India. Several times during our Indian field studies, we were told all poverty in India could be solved in the blink of an eye – if only there was no corruption. Knowing that there could be such a 'simple' remedy to all the suffering is quite disturbing, especially when you know that you, as an urban planner, simply cannot solve this.

Our aim of the thesis was to gain a greater understanding of the use, functions and potential improvements of the slum settlement of Leprosy Colony. We spent a lot of time observing Leprosy Colony, to really understand how the settlement had developed and how people lived their lives, to see what was good and bad in their living environment. Importantly, we were not in Leprosy Colony as representatives of an NGO or a governmental agency, which we later realized the benefits of. We were there as students without any other interests, and could therefore take a more neutral role that enabled us to independently and honestly examine and observe the current situation. Our proposal later reflected the knowledge gained from these observations. The proposal is, however, quite broad and draws up general strategies rather than particular details. For our study we found this most suitable, and a way to open up for further studies and discussions rather than a final construction plan. We are aware that some of our proposed changes are quite controversial (like the development of small plots, and maybe even the bridges) and perhaps not likely to be developed further. We however found it important to bring up these ideas to pass new concepts into the discussion, and questioning the prevailing methods of slum rehabilitation rather than proposing something more 'modest' which has already been proposed somewhere else.

We noticed that many slum rehabilitation schemes focused on the individual houses and left out the neighbourhood-wide or city-wide perspective. This wider perspective came to be a key concept in our proposal, and we strongly believe this is a fundamental issue to address in order to sustainable rehabilitate slums, and an important step away from the vicious circle of segregation and fear.

One of the strengths of this thesis we believe is the fact it is a joined thesis. We think the collaboration has brought about a more creative process. The discussions, although many of them never ended in print, has been extremely rewarding. The talks has led to cross-fertilization of ideas, which has resulted in completely new outcomes that we by ourselves might not had come down to, at least it would have taken us longer. The task we decided to address was extremely complex and required a great breadth of knowledge. Therefore, cooperation has enabled an interesting exchange of our diverse skills. Since there has been two of us, we have both been able to accumulate knowledge to exchange between us, which has led to a greater width. In addition, we have both been involved in every step of the process, which means two extra pair of eyes scrutinizing everything.

10 REFERENCES

LITERATURE SOURCES

Ackelman, H. Andersson, M. (2008) *Methods to Solve the Problem of Informal Settlements - The Case of Hangberg, South Africa*, KTH, Department of Urban Planning and Environment

Andersson, E. (2010) *Gentrifieringsprocessen- Omvandlingen av nedgångna till attraktiva stadsdelar,* KTH, Department of Urban Planning and Environment

Arefi, M (1999) *Non-place and the placelessness as Narratives of Loss: Rethinking the notion of Place* Journal of Urban Design. Volym 2, p. 179-194

Augé, M (1995) *Non-places: Introduction to an Anthropology of Supermodernity*, Verso Books, New York

Barrett, R. (2005) *Self-Mortification and the Stigma of Leprosy in Northern India*, Stanford University, USA

Barros Filho, MN, Monteiro, CG (2010) *Segmented Cities with fuzzy walls: Changes in informal settlements as seen through a multi-scale analysis*, Conference paper at Everyday life in the segmented city Florence, July 22-24

Benjamin, S. (2000) *Governance, economic settings and poverty in Bangalore*, International Institute for Environment and Development

Buehn, A., Montenegro, C.E. Schneider, F. (2010) *Shadow Economies All over the World*. Policy Research Working Paper 5356 from the World Bank

Burra, S. (2005) *Towards a pro-poor framework for slum upgrading in Mumbai, India*. Environment and Urbanization 17, 67-88

Castells, M., Alejandro, P. (1989) *World Underneath: the Origins Dynamics and Effects of the Informal Economy*, The Informal Economy, MD: John Hopkins University Press (Baltimore), pp. 11-37

CASUMM (2007) *The Bangalore Metro: for ...?* Collaborative for the Advancement of the Study of Urbanism through Mixed Media

Choudhury, G.R (2003) *Changes in Perception and Projection of Mumbai in the post-liberalisation era: A study of transport Infrastructure.* Research fellowship 2002-03

Columbia University (2009) *Mumbai Dharavi – Scenarios for Development.* Graduate School of Architecture, Planning and Preservation. Architecture and Urban Design Studio III, Spring 2009

Correa, C. (1989) *The New Landscape- Urbanisation in the Third World*. Butterworth Architecture

Cumberlidge C,. Musgrave, L. (2007) *Design and Landscape for people,* Thames and Hudson Ltd, London

Dahlberg, G. (2010) *Hemliga städer: Rädslans urbana former*, Glänta produktion

Davis, J. (2002) *Taking urban upgrading to scale: where are the bottlenecks?* Massachusetts Institute of Technology Department of Urban Studies & Planning

Davis, M. (2006) *Planet of Slums.* London/New York, Verso

De Soto, H. (2000) *The Mystery of Capital – Why Capitalism Triumphs in the West and Fails Everywhere Else*. London, Black Swan

Dittrich, C. (2007) *Bangalore: Globalization and fragmentation in India's high-tech capital*. ASIEN 103: 45-58

Dudley, M. (2010) *Pune Matters -Grand Adjustments Beyond Development,* MEJAN ARC, Royal Institute of Art

Frey, B. S., Schneider, F. (2000) *Informal and Underground Economy*, forthcoming in Orley Ashenfelter: International Encyclopedia of Social and Behavioral Science, Bd. 12 Economics, Amsterdam: Elsevier Science Publishing Company

Glover W. J. (2008) *Constructing Urban Space as "Public" in Colonial India: Some notes from the Punjab,* The University of Michigan, The Journal of Punjab Studies 15, no. 1 (forthcoming 2008): 1-14.

Gregory, J. (1905) *Indian and the colonies – Cape colony*

Hart, S.L., Prahalad, C.K. (2002) *The Fortune at the Bottom of the Pyramid*. Strategy + Business 26.

Indian Government (2008) *Toolkit for Preparation of Detailed Project Report.* JNNURM scheme.

Jain, M et al. (2011) *Seamless Urbanisation and Knotted City Growth: Delhi Metropolitan Region*, Real Corp 2011

Landman, K., Ntombela, N. (2006) *Opening up spaces for the poor in the urban form: trends, challenges and their implications for access to urban land,* Urban LandMark Position Paper 7, CSIR Built Environment

Lemanski, C., Oldfield, S. (2009) *The Parallel Claims of Gated Communities and Land Invasions in a Southern City: Polarised State Reponses*, Environment and Planning A, 41(3), 634-648

Lim, G. (1987) *Housing Policies for the Urban Poor in Developing Countries*, Journal of the American Planning Association Voulme 53, Issue 2, Pages 176-185

Ljung, P., Tannerfeldt, P. (2006) *More Urban, Less Poor.* London, Earthscan/Sida
Madon, S., Sahay, S. (2002) *An Information-Based Model of NGO Mediation for the Empowerment of Slum Dwellers in Bangalore*, The Information Society, 18: 1, 13-19

Malik, A. (2001) *After modernity: contemporary non-western cities and architecture*, Volume 33, Issue 10, 873-882

Merrill, S. Suri, A. (2007) L*ow Income Shelter Finance in Slum Upgrading*. Prepared for USAID and the Urban Institute

Mrema, K. (2008) *Public Open Space as Everyday Architecture Msasani Makangira - an informal settlement in Dar es Salaam*. School of Architecture, Copenhagen Royal Academy of Fine Arts. Copenhagen, Vester Kiop

Mitlin, D., Patel, S. (2001) *The work of SPARC, the National Slum Dwellers Federation and Mahila Milan.* Human Settlements Working Paper Series Poverty Reduction in Urban Areas No. 5. IIED, London

Nijman, J. (2009), *A study of space in Mumbai's slums.* Tijdschrift voor economische en sociale geografie, 101, 4–17

Nilsson(2000) *Arkitekten ser tillbaka*, DN Bostad 23/1

Oluseyi F. (2006) *Analysis of Inter - Connectivity Levels of Urban Street Networks and Social Interactions in Enclosed Neighbourhood in Johannesburg RSA*, Humanity & Social Sciences Journal 1 (1): 79-95

O'Meara, M., (2010) *Innovative Approaches to Housing Policy and Production in Latin America - Two Cases: Sao Paulo, Brazil and Buenos Aires, Argentina*. Paper from the 46th ISOCARP Congress 2010

Pandurangan V. (2009) Bangalore

Payne, G. (2000) *Urban Land Tenure Policy Options: Titles or Rights?* Paper presented at the World Bank Urban Forum, USA, April 2000

Payne, G. (2005) *Getting ahead of the game: A twin-track approach to improving existing slums and reducing the need for future slums,* Environment and Urbanization Vol 17 No 1

Perec, G. (1997) *Species of Spaces and Other Pieces.* London, Penguin

Pow, C.P. (2009) *Public intervention, private aspiration: Gated communities and the condominisation of housing landscapes in Singapore,* Asia Pacific Viewpoint, Vol. 50, No. 2, 215–227 apv_1394, 215-227

Rivadulla, M.J. (2007) *Golden ghettos: gated communities and class residential segregation in Montevideo, Uruguay.* Environment and Planning A 39, 47-63

Ristilammi, P-M (1994), Rosengård *och den svarta poesin - En studie av modern annorlundahet,* Stockholm: Brutus Östlings Bokförlag.
Robertson, J. (2009) *The Leprosy Asylum in India: 1886 – 1947*. Journal of the History of Medicine and Allied Sciences, Volume 64, Number 4, Oxford University Press

Roy, A. (2005) *Urban Informality: Toward an Epistemology of Planning,* Journal of the American Planning Association, 71: 2, 147-158

Roy, A. (2009) *Why India Cannot Plan Its Cities: Informality, Insurgence and the Idiom of Urbanization.* Planning Theory 2009; 8; 76

Sanyal, B., Mukhija, V. (2001) *A Case of Unforeseen Conflicts in Mumbai, India*, World Development Vol. 29, No. 12, Elsevier Science Ltd, UK

Sastry G.S. (2008) *Emerging development issues of greater Bangalore,* Institute for Social and Economic Change

Salcedo, R., Torres, A. (2004) *Gated Communities in Santiago: Wall or Frontier?* International Journal of Urban and Regional Research, Volume 28.1, 27-44

Satterthwaite, D. (2008) *Understanding Asian cities: a synthesis of the findings from eight city case studies,* Global Urban Development Magazine Volume 4, Issue 2

Schneider, F. (2002) *Size and Measurement of the Informal Economy in 110 Countries Around the World*. Rapid Response Unit, World Bank

Sen, S. (2002) S*ome Aspects of State-NGO Relationships in India in the Post-Independence Era,* Development and Change, 30: 327–355.

Sheinbaum, D. (2008) *Divided City: An historical perspective on gated communities in Mexico City*, Urban Design International, Volume 13, Number 4, 2008 , pp. 241-252(12)

Shumin, C. (2003) *Role of leprosy villages and leprosaria in Shandong Province, People's Republic of China: past, present and future.* Lepr Rev # 74

Sida (2004) *The Informal Economy – Fact Finding Study.* Sida, Department for Infrastructure and Economic Co-operation.

Siemiatycki, M. (2006) *Message in a Metro: Building Urban Rail Infrastructure and Image in Delhi, India,* International Journal of Urban and Regional Research, Volume 30.2 June 2006

Sudhirta, H.S. (2007) *City profile Bangalore*, Cities, Vol. 24, No. 5, p. 379–390, Bangalore, Elsevier Ltd.

Swedish Cooperative Centre, SCC (2005) *Home sweet home.* Printed by Solna, AMO TRYCK, Stockholm.

Tranberg Hansen, K., Vaa, M. (2004) *Reconsidering Informality - Perspectives from Urban Africa,* Nordiska Afrikainstitutet 2004
UN-HABITAT (United Nations Human Settlements Programme) (2008) *State of the World's Cities 2010/2011.* London, Earthscan.

UN-HABITAT (United Nations Human Settlements Programme) (2006) *The SUF Handbook, Design Phase. Volume1: An Approach to Financial Action Planning for Slum upgrading and New Low-income Residen-*

tial Neighbourhoods.

Vagale, U. (2004) *Future trends in public open space usage. Case study: Mahatma gandhi road, Bangalore*, the Faculty of the Polytechnic Institute and State University, Virginia

Vestbro, D.U. (2008) *What are enabling strategies* in Vestbro, D U (ed.) Are Architects and Planners Obstacles to Slum Upgrading? Department of Urban Planning and Environment, KTH, Universitetsservice US AB, Stockholm

Wherever the Need (2007) *Women's Eco-SanitationToilets, India*. Registered UK charity

Wimark, T. (2007) *Upprustning och legalisering av informella bosättningar – kan det leda till gentrifikation?* Department of Human Geography, Stockholm University.

INTERNET SOURCES

Asian Info (2011) *Indias Religion and philosophy.* Available from: http://www.asianinfo.org/asianinfo/india/religion.htm

Bangalore elevated toolway LTD (2011) Available from http://www.blrelevated.co.in/

Bangalore real estate trends, (2011) Available from: http://www.bangaloretrends.com/realty-articles/485-citys-dynamics-set-to-change-with-metro.html

Britannica Online Encyclopedia (2011) Search for: *slum*. Available from: www.britannica.com

Bombay Leprosy Project (2011) Official website. Available from: http://www.bombayleprosy.org/

Commonfloor, Mantri Greens Owners and Residents Portal (2011) Available from: http://www.commonfloor.com/mantri-greens-bangalore/povp-6qlg99

Dictionary. com (2011) Search for: *in situ*. Available from: http://dictionary.reference.com/browse/in+situ

Discover Bangalore (2011) Available from: http://www.discoverbangalore.com/

Dutta, P. (2008) *Bangalore's poor forced to live in tin sheds*. CNN-IBN 2008-02-28, IBN Live (online). Available from: http://ibnlive.in.com/news/bangalores-poor-forced-to-live-in-tin-sheds/59991-3.html
Farrow L. (2010) *A new home has built a brighter future.* Riksutställningar – Swedish travelling exhibitions. Available from: http://www.riksutstallningar.se/Templates/ExtNews_____37801.aspx

Geography (2011) *The Twenty Largest Countries in Area in the World*. Available from: http://geography.about.com/od/countryinformation/a/bigcountries.htm

Hammarby Sjöstad (2011) official homepage. Available from: http://www.hammarbysjostad.se/

Hough, A. (2011) *Princes Charles' new 'Slumdog Millionaire' eco Indian town inspired by Poundbury.* The Telegraph 2011-01-11 (online). Available from: http://www.telegraph.co.uk/news/uknews/theroyalfamily/8252038/Princes-Charles-new-Slumdog-Millionaire-eco-Indian-town-inspired-by-Poundbury.html

Indian Express (2011) *Indian millionaires now number 1.5 lakh*. 2011-06-23. Available from: http://www.indianexpress.com/news/indian-millionaires-now-number-1.5-lakh/807800/0

Indian real estate board (2010) Forum on Mantri Greens developments. Available from: http://www.indianrealestateboard.com/forums/showthread.php/21997-mantri

Iyer, K. (2009) *Downturn in Dharavi*. The Indian Express 2009-04-01 (online). Available from: http://www.indianexpress.com/news/downturn-in-dharavi/429262/

Kumar, P.V. (2011) *9-year wait for a roof over their head ends.* The Times of India, 2011-04-27. Available from: http://articles.timesofindia.indiatimes.com/2011-04-27/bangalore/29477951_1_maverick-holdings-division-bench-petition

Lakshmikantha, BK (2011) *Bangalore's Mantri mall ramp to be demolished today,* DNA 2011-06-01. Available from: http://www.dnaindia.com/bangalore/report_bangalore-s-mantri-mall-ramp-to-be-demolished-today_1549795

Levinson, H. (2002) *Tomb with a view.* BBC News 2002-03-06 (online). Available from: http://news.bbc.co.uk/2/hi/programmes/crossing_continents/africa/1858022.stm

Longman Dictionary of Contemporary English (online) (2011) Search for: *in situ*. Available from: http://www.ldoceonline.com/dictionary/in-situ

Malmö Stad (2009) *Kulturarv Malmö, Bo01*. Available from: http://www.malmo.se/Medborgare/Kultur--noje/Arkiv--historia/Kulturarv-Malmo/A-D/Bo01.html

Mumbai climate guide (2011) Available from: http://www.climatetemp.info/india/mumbai.html

Nationalencyklopedin online (2011) Search for: *miljonprogrammet*. Available from: http://www.ne.se/miljonprogrammet

Online Business Dictionary (2011). Search for: *unstructured interview*.
Available from: http://www.businessdictionary.com/definition/unstructured-interview.html

Peepoople AB (2011) Official homepage. Available from: http://www.peepoople.com/index.php

Population Labs (2011) Available from: http://www.populationlabs.com/India_Population.asp

Rama Mansi S.A. and Köster-Lassack A. (2005) *Missing: 50 million gils,* New York Times 2005-10-25.

Available from: http://www.nytimes.com/2005/11/24/opinion/24iht-edswami.html

Smittskyddsinstitutet (2011), Sjukdomsinformation om lepra. Available from: http://www.smittskydd-sinstitutet.se/sjukdomar/lepra/

SPARC (2010) Official homepage. Available from: http://www.sparcindia.org/index.aspx

The Economic Times (2010) *Largest mall, Mantri Square to have metro connectivity,* 2010-03-15 Available from: http://articles.economictimes.indiatimes.com/2010-03-15/news/27608943_1_largest-mall-metro-connectivity-mantri-developers

The Hindu (2011) *Mantri Square compound wall demolished amid drama*, 2011-06-02. Available from: http://www.thehindu.com/news/cities/Bangalore/article2070479.ece

The Hindu (2011). *Slum-free India scheme to be taken up as national mission,* 2011-08-15. Available from: http://www.thehindu.com/news/national/article2358818.ece

Tyréns Tempelplan (2011) *"BoTrender08": svenskarnas önskemål om framtidens boende kartlagt .* Available from: http://www.tyrens.se/sv/Artiklar/Nyheter/2008/BoTrender08-svenskarnas-onskemal-om-framtidens-boende-kartlagt/

UN (1948) *The Universal Declaration of Human Rights.* Available from: http://www.un.org/en/documents/udhr/index.shtml

UN (2007) *Department of Economic and Social Affairs. World Urbanization Prospects Population Database.* Available from: http://esa.un.org/unup/

YUVA (2008) *No Remedy Still.* Video on a slum rehabilitation scheme in Vashi Nakka, Mankhurd, Mumbai. Available from: http://www.youtube.com/watch?v=Ew4_0mUv-2E

Wikipedia (2011) *India.* Available from: http://en.wikipedia.org/wiki/India

World Meteorological Organization, WMO (2011) *Bangalore climate.* Available from: http://www.worldweather.org/066/c00523.htm

World Wide Words (2011) Search for: *Bangalored*. Available from: http://www.worldwidewords.org/turnsofphrase/tp-ban1.htm

UNPUBLISHED

Burra, S (2011) SPARC advisor, Mumbai. Mail conversation 2011-12-09.

RV College of Engineering (2010 unpublished) *Behind the curtains.* Student's report on Leprosy Colony, Bangalore

Mahila Milan, SPARC (unpublished) *City In-situ Rehabilitation Scheme for Urban Poor Staying in Slums in City of Pune Under BSUP, JNNURM*

Nair, J. (unpublished) *Battles for Bangalore: Reterritorialising the City, Bangalore*, Centre for the Study of Culture and Society

SPARC (2009 unpublished) Social survey of Leprosy Colony. 70% of households questioned on separate survey sheets. Analyzed and assembled by Bratel and Hellqvist 2011.

Suresh N.S. (Interregional Adviser in Resource Mobilization, UN) (unpublished) *Informal economy. The Special Tax Regime for Small and Micro Bussiness: Design and Implementation*.

INTERVIEWS

Cars, G. (2011) Professor in urban planning, Royal Institute of Technology, Stockholm. Telephone interview 2011-06-28

Choudhury, G. R. (2011) Architect Designether, Bangalore. Interview Bangalore 2011-04-04

Ganapati, R (2011) Founder of Bombay Leprosy Project. Interview Mumbai 2011-05-14.

Kunte, K (2011) SPARC consultant, Mumbai. Interview 2011-05-16, Mumbai.

Metha, M (2011) Architect of MM Consultants, Mumbai. Interview 2011-05-16, Mumbai.

Persson, C. (2011) Sales manager at Victoria Park, Malmö. Interview Limhamn 2011-08-11.

Purushotham, Thomas (2011) SPARC associate, Bangalore. Interview Bangalore 2011-04-05

Samuel, J. (2011) SPARC associate, Bangalore. Interview Bangalore 2011-04-05

Singh, S (2011) Slum activist and engaged in Save Home Build Home (BHSH). Interview 2011-05-16, Mumbai.

Varghese, M (2011) Program Co-ordinator Habitat Programme, YUVA (Youth for Unity & Voluntary Action). Interview 2011-05-17, Mumbai.