

THE FUTURE OF INFORMAL PATHWAYS

Reinforcing the identity of public space in hilltowns





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Motivation

I started this research with my interest in these informal pathways of our localities. As children growing up we always used these pathways as our play areas. They were extensions of our private lives and there was always activities happening on these streets. Coming from this region and the community I have always learnt how to value these small lanes and streets. As children the local water taps were points where we would meet our neighbours. Performing everyday domestic tasks such as fetching water from these local taps facilitated our interactions with our neighbours and helped us form closer ties with our neighbours. Even the cleaning drives which happened in our neighbourhoods enabled our interactions with our fellow residents and allowed for more closer bonds to form among neighbours. I was always intrigued by the fact that the places where I got acquainted to new people and met with my neighbours were always these spaces.

A few years ago there were still many vernacular single storied residential buildings opening up onto these streets making them more friendly to walk on. However, quite recently in the last five years I have noticed the tearing down of these old vernacular house types to make room for huge multi storeyed building apartments to make way for the population growth. This resulted in the negligence of the left over spaces in between the buildings and thus there was a slow degradation of activities which would happen at the street level. These areas were no longer places where we would play and engage and interact with our neighbours. The growing population and the number of multistoried building apartments has also made some of these local water taps redundant. This has greatly diminished the character of these streets as the social spaces of the community. I realised that as an Urbanist, public spaces are one of the most important aspects of cities and the quality of life in cities is also dependant on the quality of public spaces. These pedestrian pathways are in a way the public spaces of hilltowns since hill areas mostly lack any scope for large public urban spaces because of their topography. Thus public spaces and public realm exists on these pathways and their survival would be based on their ability to maintain their character and identity. It is for this reason that I wanted to know what the future holds for these informal paths and what does it mean if we lose out on our public spaces. Hence, my reason for choosing this research topic.

Abstract

This thesis is an exploration of the cultural characteristics and urban identity of residential neighbourhoods of Shillong, a hilltown settlement in the north east region of India. The rapid pace of unplanned urbanization trends in the hill stations of India has resulted in the degradation of the quality of public space networks of hill stations which are of primary importance to the structure and quality of the urban environment. The present scenario of development in hill stations have resulted in extreme pressures in the built environment such as problems related to congestion, overcrowding, pollution and inadequate infrastructure which has resulted in a change in their morphology. Urban identity is a concept which entails a certain quality of life for the urban residents and can be used as a tool for maintaining quality of life in the face of rapid urbanization. Form, activity and meanings are the aspects which contribute to sense of place and it is these aspects which contribute to identity of a place. Due to change in building typology from the low-rise bungalow typology to the midrise apartment buildings which now graze the skyline of the neighbourhood this shift has seen a neglect in the urban infrastructure (movement networks) which provide accessibility as well as behave as a public realm. This neglect has been noticed in the rise of unsafe neighbourhood streets. This thesis aims to identify aspects of the urban environment, both tangible(physical) and intangible (mental and social), which contributes to the making of urban identity. It aims to provide a strategy, based on the qualities of urban identity, for one of the oldest townships of Shillong city which had seen a gradual decline in the quality of the network of public space structure which exists in the neighbourhood in order to bring back life to the network of public spaces in order to make them safe and also provide a better living environment for the residents. Drawing on such understandings the aim is to create a design strategy which aims at recreating these informal pedestrian streets as the social and public realm of the city.

Key words - Place Identity, Place making, public realm, informal pathways, Hilltowns

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Hilltowns of India

This section will give a description of the context of hilltowns from their inception to the current situation. It also paints a picture of what informal pathways in the north eastern region of India are like in its native form. It also gives a brief description to the urban identity and what are the threats to urban identity in the face of rapid urbanization

1.1 What are hilltowns

Emergence of Hill towns in India

During the British colonial period around 80 hill stations were established in India (Kumar & Pushplata, 2015) (Illustration 1). During the period from 1750- 1947 the British set up several hill stations to protect the British personal from the hot summer months of the Indian sub-continent. They were initially developed in picturesque settings and cool climates. Prior to these developments, these locations usually consisted of small hamlets or remained undiscovered hinterlands.

Initially the hill stations were only meant for the ruling class and service sector people required for serving them. They were meant as health resorts initially but later turned into summer retreats for the British and then later grew as administrative centres for the British (Kumar & Pushplata, 2015). Over time these cities grew and after independence they were met with rapid influx of people from the rural to the urban areas. Thus, from becoming as a retreat from the city these hill towns, in their own way turned into the starting point of a city. Their initial purpose started to fade away and they started to become important economic hubs of the regions. The unique urbanscape present in hilltowns is a result of weaving together of the topography, architecture, street arrangement urban spaces and vistas of hilltowns (Kumar, 2016).

Many of the constraints for development in hill stations were related to insufficient accessibility, fragile ecology, high seismic vulnerability, absence of infrastructure and acute availability of construction materials and skilled workmanship

(Kumar & Pushplata, 2015). This resulted in urban forms which were always not compliant with the conventional rules and regulations of planning and construction and in most scenarios resulted in sub standard quality of the built environment.

In the case of hilltowns the British usually recruited and brought with them people from other communities and regions to help in the maintenance of these establishments which they propagated across India. This brought with it peoples from different cultural communities to settle in lands which were not their own.

With India gaining independence in 1947 these areas have been experiencing rapid urbanization owing to population growth and increase in tourist activity (Kumar & Pushplata, 2015). This resulted in the hilltowns developing much more than their carrying capacity. There has been a slow degradation in the quality of the urban spaces in hilltowns due to rampant and emerging multi storied buildings competing for development in scarcely available land. The complex geography of hilltowns creates challenges for development owing to lack of availability of suitable land for development. The structural characteristics of the city are closely related to the geography of the landscape. This competition for land has also hampered the network of public spaces which contribute to the making of the identity of hill towns. What once was a close connection and interrelation between the street network and building interface has resulted in the disregard of the public street networks and they are slowly shifting to becoming the left-over spaces of the urban environment of hilltowns.

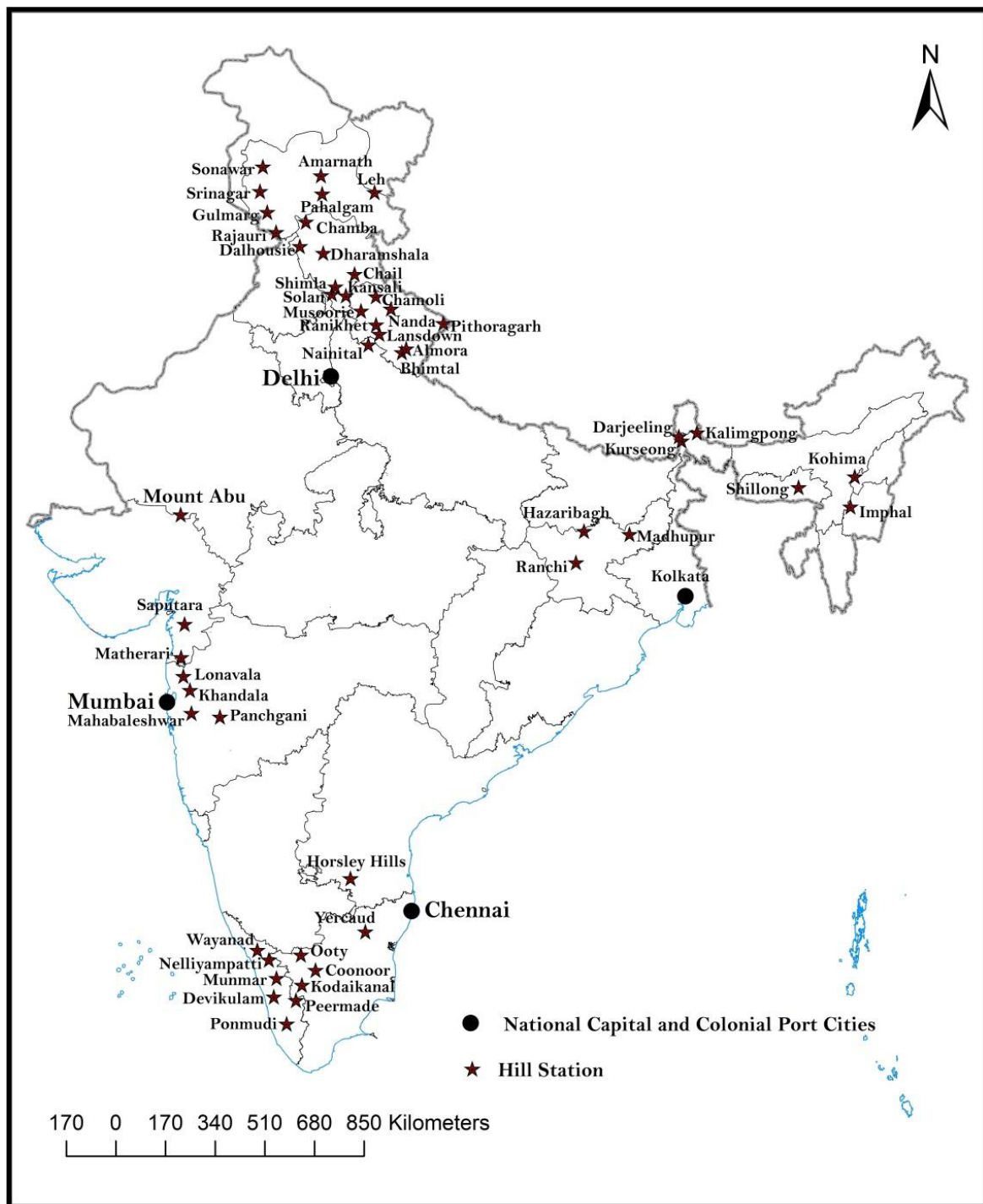


Illustration 1 : Hilltowns across India

Source : Shekhar, R. (2018). Hill Stations in India: Growth and Challenges. Retrieved from <http://www.aensi.in/assets/uploads/doc/f3520-04-08.14353.pdf>

1.2 Pathways in North East India

People living in the rural areas of Meghalaya a state in North east India have a unique way of how they have developed their pathways. In rural areas these informal pathways were meant as a connection between the various villages and small settlements. Owing to the torrential monsoon rains and deep ravines some of the villages in these areas needed to be connected to each other. Being in one of the wettest places on earth which receives an average of about 10 to 12 meters of rain per year any sort of construction involving wood or bamboo would not suffice as they would just rot in the heavy rains.

The only way to connect these villages together were through these living root bridges (Illustration 2). Since these bridges are living they grow stronger with time. These have been made from the roots of the rubber tree which takes at least 15 to 20 years to grow and lasts for about 500 years. The villagers grow these bridges by laying out these roots on the stems of the betel nut plant in order to coax the roots to grow across the streams. These grow across streams and rivers connecting various villages together. These rural pathways not only served functional purpose of dealing with climatic effects but also symbolised a deeper meaning linked to living with nature and sustainable living architecture.

Since they are in the rural areas and also across streams they were areas where people would go to wash their clothes and these served as a community space for social interactions. Over the years however, because of the popularity of these pathways to tourists there has been a shift in meaning. These root bridges were a product of community participation to grow and tend to these roots and trees together. They have slowly transformed their meaning from that of self preservation of nature to one of heritage which now attracts tourists (Illustration 3).

Pathways in this context bear a more deeper meaning than just a movement corridor from one location to another but is deeply engrained in the life and culture of the people as well as the social context.

These paths had a very strong identity not only because of their form and method of construction but also because of the symbolism associated with these paths which symbolises that of sustainable living. Although the activities associated with these pathways change over time from social gathering spaces for washing clothes in the streams to the heritage sites and tourist destinations of today, however they still portray a very strong identity and image.



Illustration 2 : Living root bridges of Meghalaya; from the stream

Source : Taken by the author



Illustration 3 : Living root bridges of Meghalaya; across the bridge

Source : Taken by the author

1.3 Identity in the Urban context

Identity of a given place is shaped by social and cultural elements of a particular community or tribe which manifests itself in the physical form of the of the urban locality. Urban identity is a way of representing natural, manmade and cultural components of the city (Ziyaee, 2017). The concept of place identity can help identify individuals' perceptions of what a place is and what common elements help shape the beholders sense of image of a place. The contribution of the urban environment to the sense of identity is what this research is going to explore. As Hull states we need to comprehend our environmental surroundings in order to hinder or facilitate our goals (Hull IV, Lam, & Vigo, 1994). These goals may be anything from achieving a good living environment to satisfying one's basic needs. This hinderance of our goals by a distortion of the physical environment creates hinderances to us achieving our sense of identity. Conclusions suggested by Hull state that place identity contributed to this notion of self-identity which invariably adds to one's coherence as an individual and to one's health (Hull IV et al., 1994). Place identity also increases sense of community which are based on common ideals which we share with others living in the same community. Hence, having an environment which reinforces one's sense of identity is crucial for the mental and physical

well-being of an individual. Linking culture with the physical and social transformations within the city can contribute to improving the liveability of cities (UNESCO, 2016).

According to Relph(1976) he posed that identity of a place composed of three main components i) physical features and appearances ii)activities, and iii)meanings . The diagram given below (Illustration 4) shows the basic elements which contribute to an understanding of sense of place as posed by Punter (1991) and Montgomery (1998) which shows the critical factors which shape the sense of place in urban public spaces (Ziyaee, 2017).

A change in the essential characteristics of one of these elements leads to a weakening of the idea of sense of place. This would lead to problems of certain spaces falling to disuse and neglect owing to loss of sense of ownership of such spaces.

In most cases the sense of identity usually changes or transforms because of a change in the form or physical appearance. This may be mainly attributed to trends of rapid or sudden urban transformation processes accompanying growth in urban populations (Ujang & Zakariya, 2015).

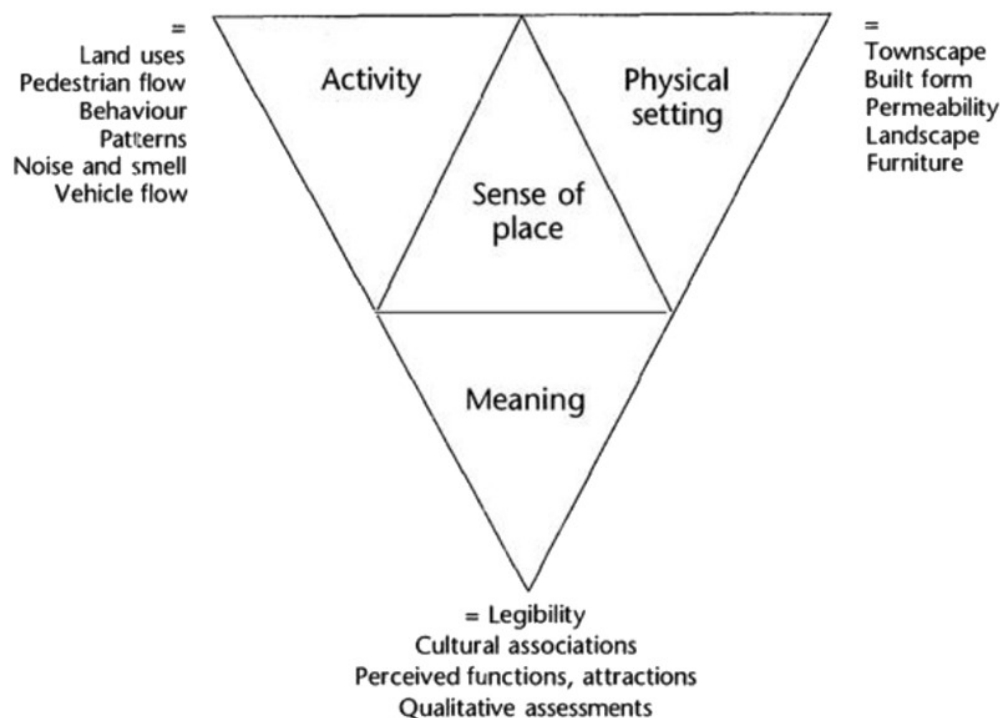


Illustration 4 : Depiction of understanding of sense of place

Source: <https://doi.org/10.1016/j.cities.2017.10.021>

A well-designed public space is one with memories, meanings and identities for their users. In today's world of globalization and rapid urban transformation there is a threat to unique cultural identity in cities. The loss of the coherence between these three aspects have resulted in a weakening in a sense of identity. The loss of urban identity can be witnessed by these two prominent factors of today. The trends of rapid unplanned urban growth create buildings as isolated objects separated from the landscape which has an impact on the traditional public spaces which exists in some of the older settlements of a city which were a response to cultural and natural components of the city (Ziyadeh, 2017). The new developments as a result of rapid urbanization processes creates unshaped spaces which do not provide the users with any sense of place especially in the context of the developing world where unplanned urban growth is very apparent. The planning and development concepts in contemporary cities today along with commodification of different places have resulted in the loss of sense of identity in cities (Ujang, 2017).

1.4 Threats to Urban Identity

In the Asian context we see the trends of rapid urbanization and urban growth much more. The World Bank predicts that over the next three decades urban areas in Asia will grow by 60 million inhabitants a year. This will mainly in the form of natural growth, migration and reclassification of rural areas (Nadarajah, 2007). With this rapid urban growth predicted it is vital to look at urban areas in developing countries and how to tackle problems of loss of identity in cities. The urban populations of both China and India will grow to more than 340 million by 2030 which will put huge stresses on the urban infrastructures and the environment (Nadarajah, 2007). This creates opportunities in terms of urban growth but puts pressure on the way in which the growth will happen as well. Urbanization through man-made structures caused visual/non-visual complexities in the way in which they respond to the natural and cultural features of the environment which can greatly influence and have an impact on the identity of an urban area and alter it (Ziyadeh, 2017). The unplanned urban growth brings with it a neglect of the in between spaces between plots of developments. The complexity of urban development in countries of the developing world is that most of the urban development's occur in an unplanned way.

The trends of rapid urbanization are also serious in the context of India as well. As per the Census of India of 2011 (Illustration 5) the population of India stood at 1.21 billion out of which 31.16% lives in urban areas which is a huge rise from 21% in 2001.

This rapid urban growth occurs because of natural growth, migration patterns and reclassification of rural areas. The third point which is the based-on reclassification of rural areas is particularly the case of urban growth for most cities in India. These areas lack the administrative and technical machinery to cope with such urban growth. This leaves the urban growth to take place without any clear framework for the infrastructures which support these new developments. Infrastructures such as public space networks get neglected and are seen as residual spaces of the new urban developments.

With liberalization of the economy and impetus on social and economic activity urban centres are poised to tremendous economic growth. The growth of such areas has given millions of people to what we call progress, but problems start arising when cities become too big to be socially manageable such that they start distorting the development in the surrounding hinterlands of the city as well as the whole structure of the society as well.

By resorting to the rules of market driven society which shows little concern on waste generated, energy demands, happiness of the society and

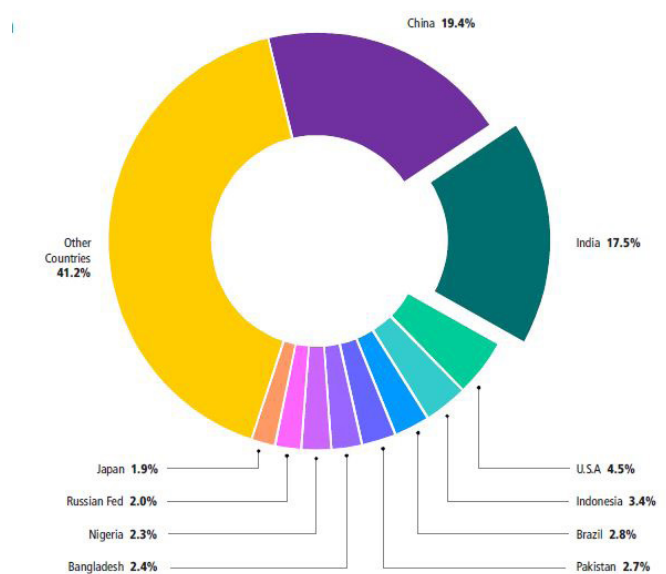


Illustration 5 : India in world population

source: http://censusindia.gov.in/2011-prov-results/data_files/india/Final_PPT_2011_chapter3.pdf

relationships with other species these rules have affected people's behaviour (Nadarajah, 2007). The need to satisfy some of the demands of rapid urban growth sometimes creates adverse effects on the physical character of a place and results in the loss of urban character or identity.

Cultural identity in urban areas has now become of even more importance, while urban heritage is the most represented category in this list, urban sites are faced with critical conservation issues, such as rapid urbanization, unplanned infrastructure, standardized renewal projects and urban densification which is more common in the developing countries in South Asia such as Pakistan, India, Bhutan, Nepal, Bangladesh (UNESCO, 2016).

It is imperative to recognize the importance of urban identity and sense of place to strengthen and keep social ties between citizens living in urban areas. This is even more important in today's

world with different people from different cultural and ethnic backgrounds moving into urban areas, which creates a mix and blending of people from different backgrounds. Globalization and commodification have been driven by the trends of the global market to move forward without the deliberation of community or endogenously based cultural transformations (Abdel-Hadi, 2012) which results in the loss of distinct urban culture and a loss of "place identity "as well as "people identity".

In parts of Asia the significance of cultural diversity is manifested through the colonial influence, multi ethnic and multicultural environment and this suggests that the evolution of such environments should continue with the social well-being of the communities and their valuable and shared memories that they have had in such locations (Ujang & Zakariya, 2015).

This thesis takes a closer look at the context of hilltowns of India, a case of Shillong, which has been developed because of different communities and groups of people living together and sharing a common history together.

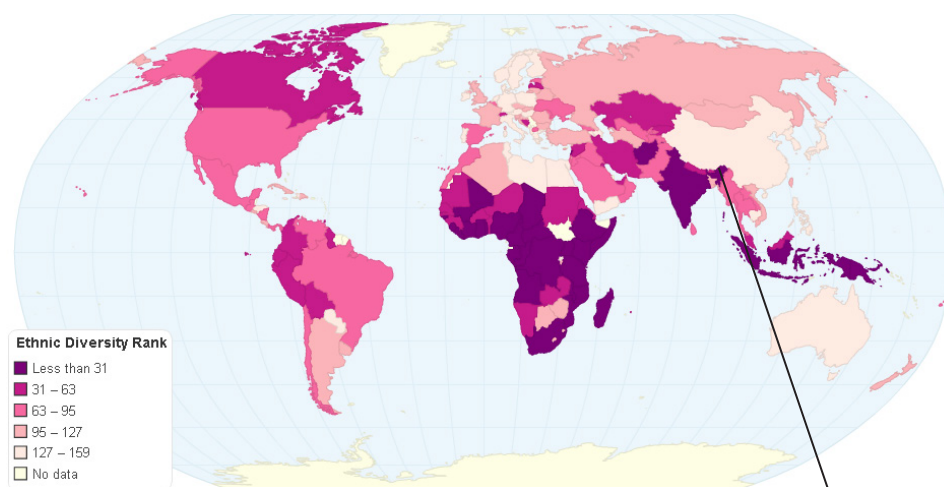


Illustration 6 : Cultural diversity in the world

source: <http://chartsbin.com/view/41545>

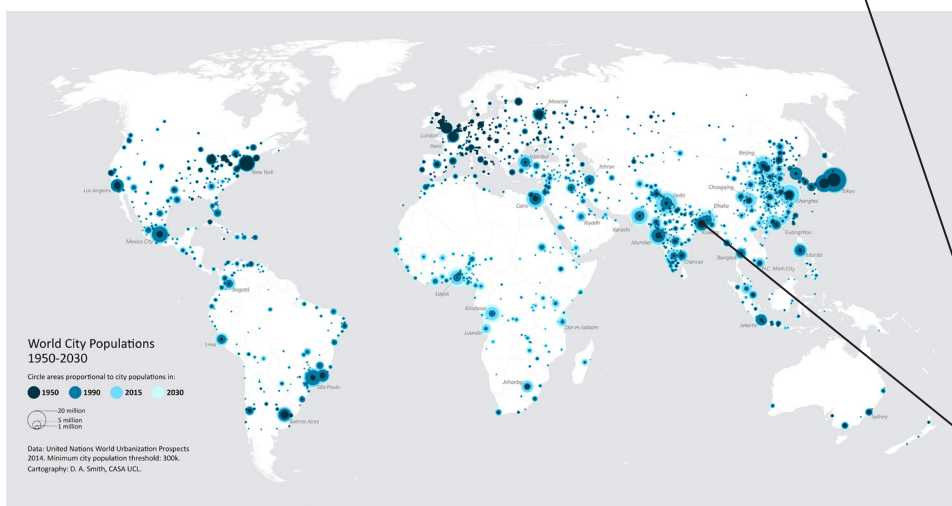


Illustration 7 : List of urban populations in different countries

source: https://www.reddit.com/r/MapPorn/comments/4safb3/world_city_populations_19502030_4356x2283/

Cultural diversity and population growth



2

problem definition

This section will give a brief account into what are the issues currently plaguing the area of study. We will start by describing the city of Shillong with some details to its location and current trends. Later sections will describe the nature of public spaces of hilltowns and the last section will describe the problems associated with the informal pathways and the public realm

2.1 The North east region and Shillong

India presents itself with a huge mix of cultural diversity as well but at the same time rapid urbanization trends. The challenge here however is to not only look at the large mega cities, but the vulnerability lies with even the smaller urban areas.

The hilltowns of North East India in themselves are a microcosm of unique cultural identity and character. Today it consists of 175 different tribal communities speaking over 220 different languages and dialects. Being located away from major mega cities and in more picturesque settings they are known for their natural beauty and unique cultural identities which are also important tourist destinations for people from the plains of India to visit on holidays.

Being in hilly terrain and topographically challenging areas of the country they pose ecological and environmental risk as well as threats to loss of unique cultural identity because of the onslaught of rapid population growth.

Environmental quality of such areas has also been put at risk due to rapid urbanization trends. Environmental degradation is a result of rapid urban expansion, population growth, loss of natural vegetation and pollution. The environmental degradation of urban environments is even more critical in the case of hilltowns which are ecologically more fragile areas due to the complex morphology and geo environmental conditions (Kumar & Pushplata, 2013).

Unlike other urbanising areas however, hilltowns in India are the areas which are experiencing the most rapid urban transformations. According to the census of India 2011 growth rate of India currently stands at 17.64%(Census of India, 2011) which is not the same as the hilltowns of India like Shimla or Shillong which show a growth rate of 35%(Shimla Development Plan, 2011) and 32%(Census of Meghalaya, 2011) respectively.

What can be seen (Illustration 8) is that the areas highlighted represent the hill areas of north east India which also show a higher population growth rate in the period from 2001-2011. It would therefore be essential to look into a strategy for the continuity of identity of hilltowns in the face of such rapid unplanned urban growth.

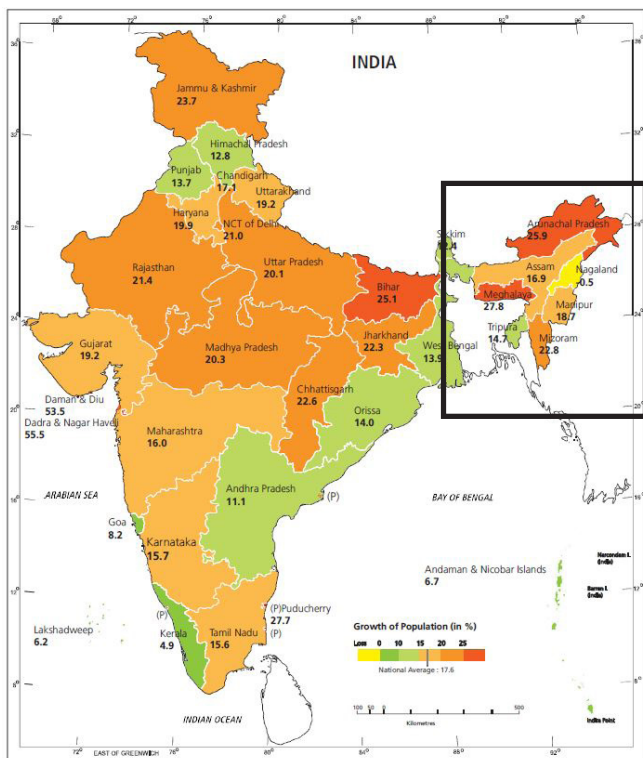


Illustration 8 : Growth rate of population in India

source: http://censusindia.gov.in/2011-prov-results/data_files/india/Final_PPT_2011_chapter3.pdf



Illustration 9 : State of Meghalaya in North East India

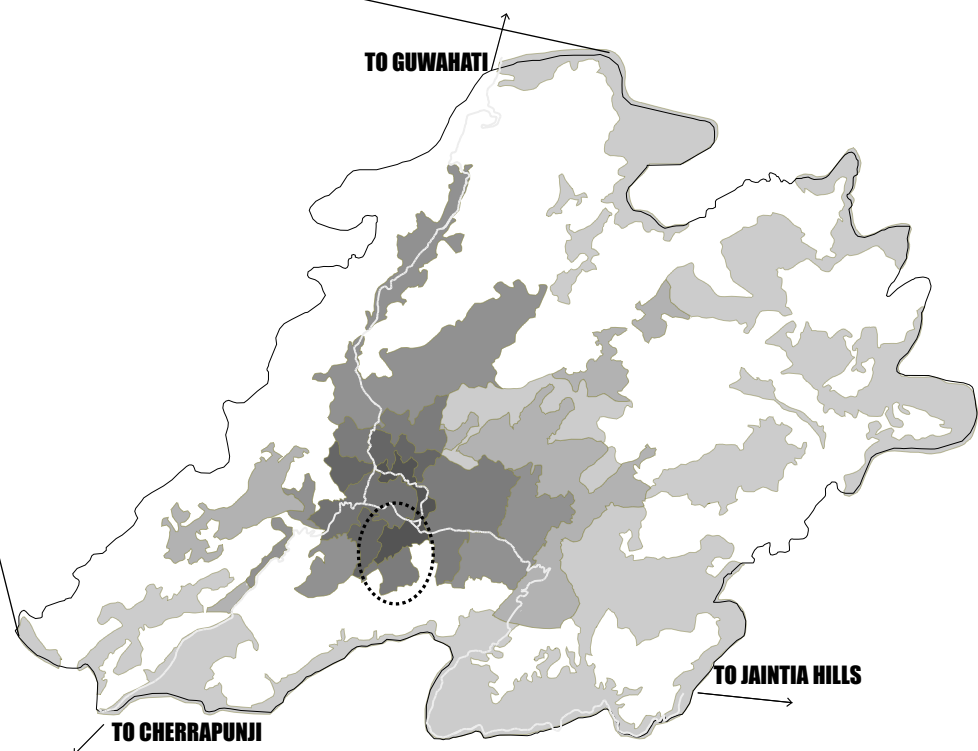


Illustration 10 : Shillong City

Source : Made by the author, Information retrieved from UP Department SPA. (2008) Strategic Development Plan for Hill Capital; Case Study - Shillong

Shillong is the capital city of the North-eastern state of Meghalaya and is predominantly a tribal community. However, being the capital it consists of a huge diversity of different groups of people living in the same area.

The city sits at a very strategic location in the North East since it lies very closely linked to the other major city in the region, Guwahati which

is the link to the rest of the country. Hence, it is well connected to the rest of the country through the airports and train stations which are located in Guwahati.

The map above (Illustration 10) shows the growth of the city from the establishment in the 1860's to today. The locality of study is shown here in the image above.

2.2 Rapid Urbanization in Shillong

According to the Masterplan of Meghalaya 1991-2011, over 1000 homes were being built every year which puts huge stress on urban infrastructure since it cannot cope anymore with the growing trend of urban densification and urban sprawl. There have been no interim master plans since the 1991-2011 masterplans, but it is safe to assume that the number of households built each year has increased quite considerably owing to the trends of population growth as per the latest census reports. In a hilltown, because of the topography and slope morphology, finding suitable land for urban development is a constraint and can be of environmental concern as well.

The urban growth of the population of Shillong has seen a rapid increase in the urban population of the past few decades. As was already pointed out earlier, hilltowns are also areas of higher rapid growth as compared to other areas in India. Being ecologically fragile areas, mitigation strategies also need to be enforced to prevent environmental degradation in such areas.

To mitigate the impacts of environmental degradation building regulations are enforced which only address such issues as building heights, site drainage, setback regulations and floor area ratios (Kumar & Pushplata, 2013). The development process following these existing norms only create piecemeal solutions and lack an overall holistic approach to the development of the city. Owing to this, an unplanned process of urbanization is taking place which ignores the complex topography and land drainage systems as well as the existing socio-cultural way of life which exists at the tissue level of the urban structure which is now losing importance. There is no framework or guidelines to mitigate the negative impacts urban densification has on *social structures* and *public space networks*.

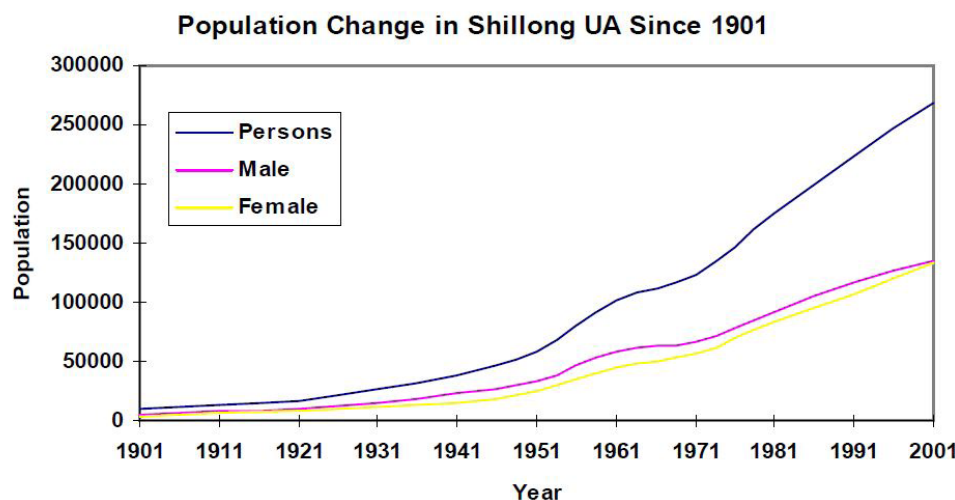


Illustration 11 : Population growth in Shillong Urban Agglomeration area (Shillong UA)

Source : https://www.researchgate.net/publication/237397443_Role_of_Water_Supply_and_Sanitation_for_Hill_Area_Development_Using_Remote_Sensing_and_GIS_Techniques_A_Case_Study_of_Shillong_Urban_Agglomeration_India/figures

Considering Shillong is urbanising at a more rapid pace being a hill station and a centre for education, tourism and commerce in the north east region, we have to ask how would a more resilient urban development be achieved in such a centre having a rich cultural heritage in its past. How would recognition of some of the potentials which exist in the landscape guide a more sustainable urban development for the city and the region as

a whole.

The map below (Illustration 12) shows the size of the population in the older areas of the city and this map illustrates that the majority of the urban population lives in the older parts of the city.

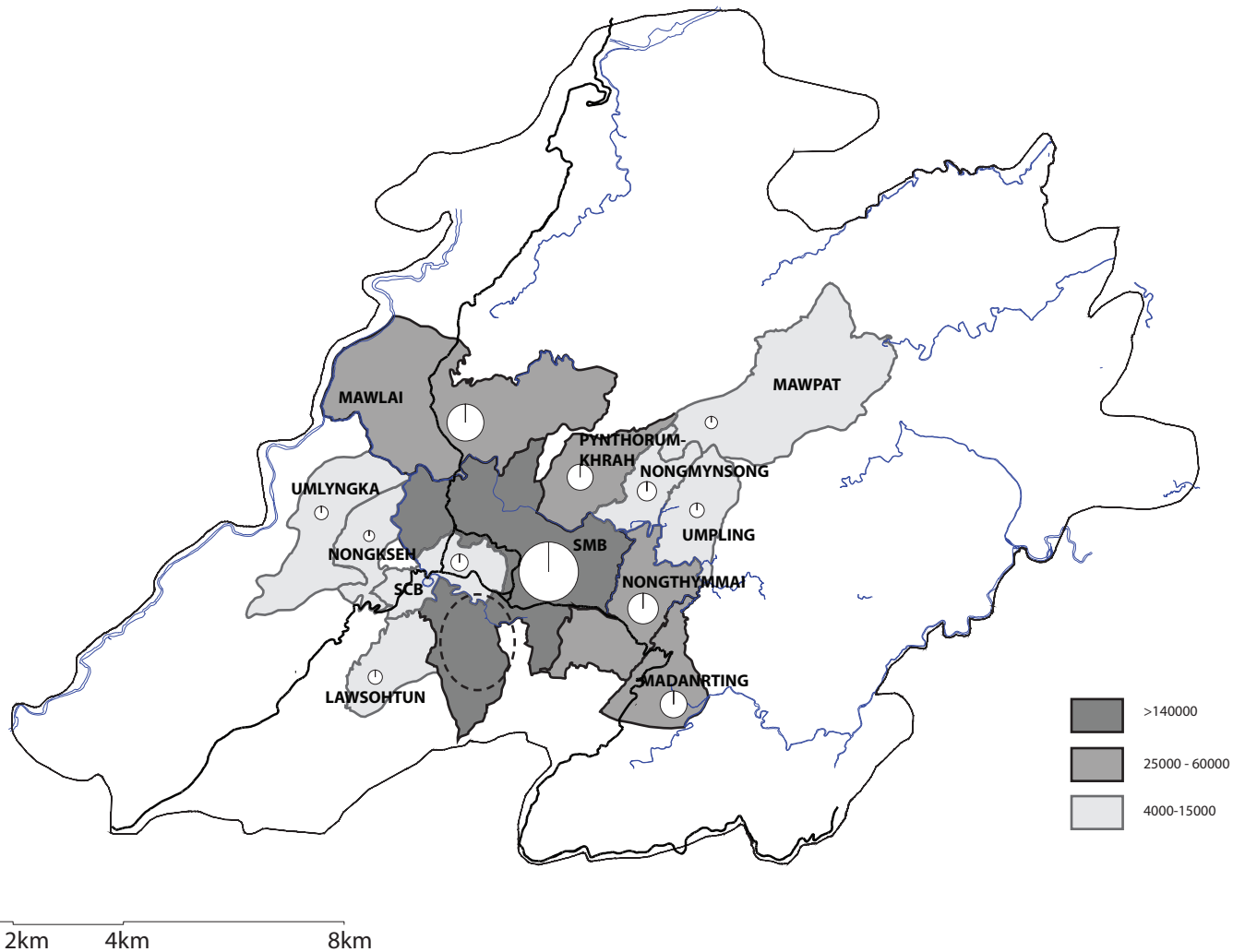


Illustration 12 : Population size in the different census towns of Shillong

Source : Made by the author, Information retrieved from Statistical Handbook of Meghalaya 2017

The most populated and densely occupied areas of the city is also the municipal area which is also one of the oldest parts of the city. However, it is also seen that the urban growth in recent years has grown to the fringe areas and there are newer areas in the city with almost just the same urban density as seen in the map below (Illustra-

The essence of this research would be to recognize and reinforce the characteristic features which make up the identity of hilltowns which in this case, exists in the form of the pedestrian pathways and public space networks. This would help to revise the perceptions residents have had over the public space networks as a social and com-

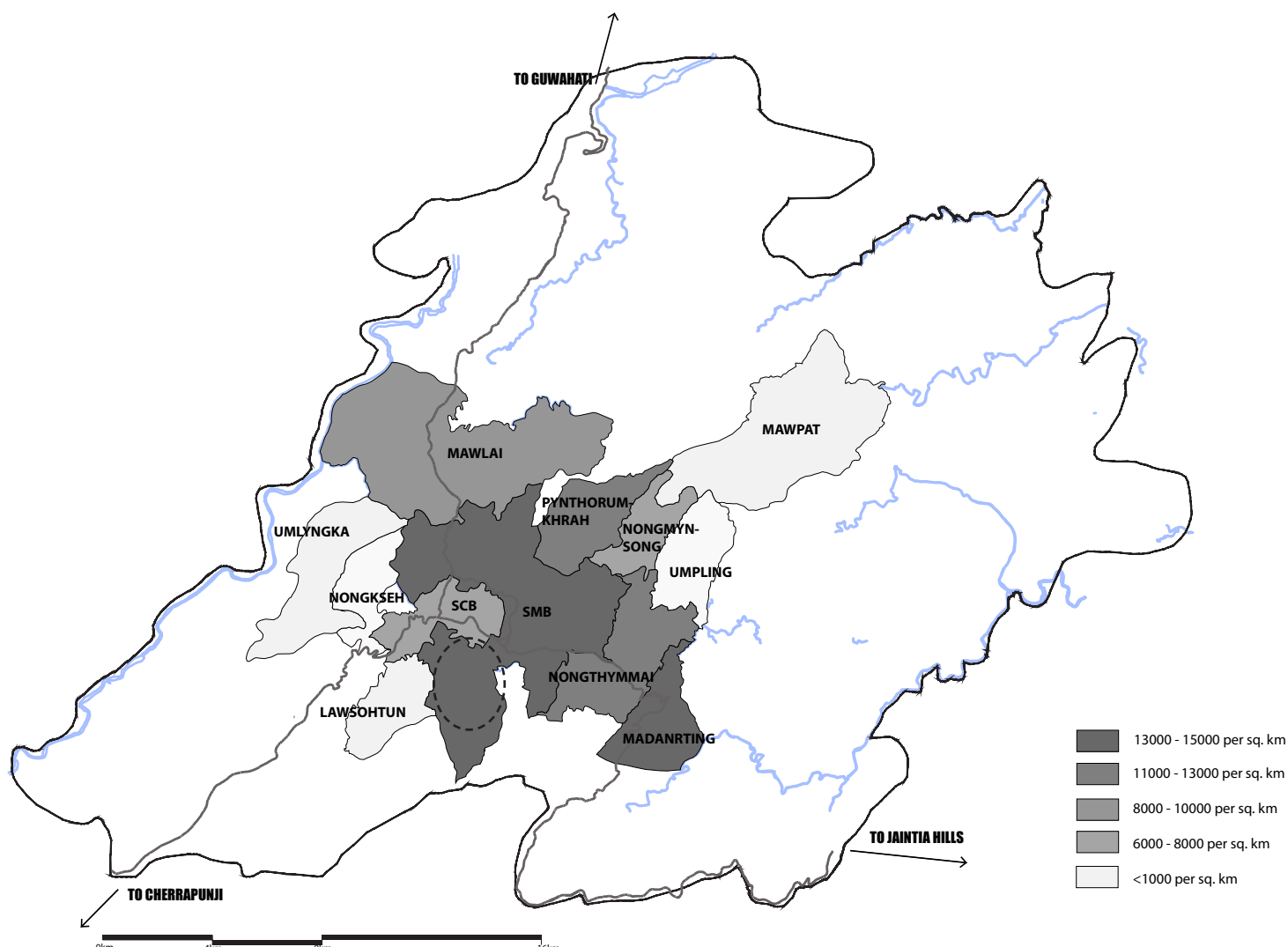


Illustration 13 : Population density in the different census towns of Shillong

Source : Made by the author, Information retrieved from Statistical Handbook of Meghalaya 2017

tion 13). These new fringe areas have been reclassified as urban areas over the last few years. However, they lack the administrative machinery to tackle unplanned urban growth.

munal space for social interactions rather than just being a means for movement and mobility.

2.3 Decline of public spaces in Shillong

The area we will be discussing more in detail here is one of the oldest localities of Shillong. One of the areas of the city where the problem of un-planned urbanization is much more critical is in one of the oldest neighbourhoods of the city. This is the Laban locality and is located in the heart of the city.

The map below shows the historical growth of the city from the early 1860's to the 1990's and 2000's. This area of the city is historically the oldest part of the city and also the area with most of the urban services such as commercial and administrative buildings being located.

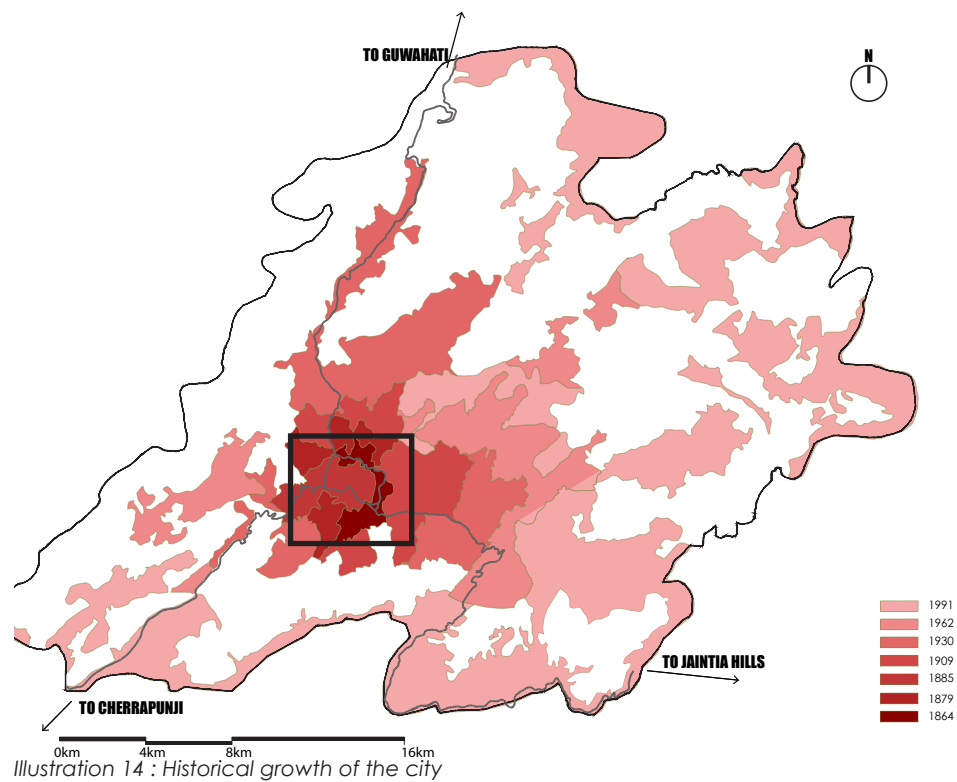


Illustration 14 : Historical growth of the city

Source : Made by the author, Information retrieved from UP Department SPA. (2008) Strategic Development Plan for Hill Capital; Case Study - Shillong

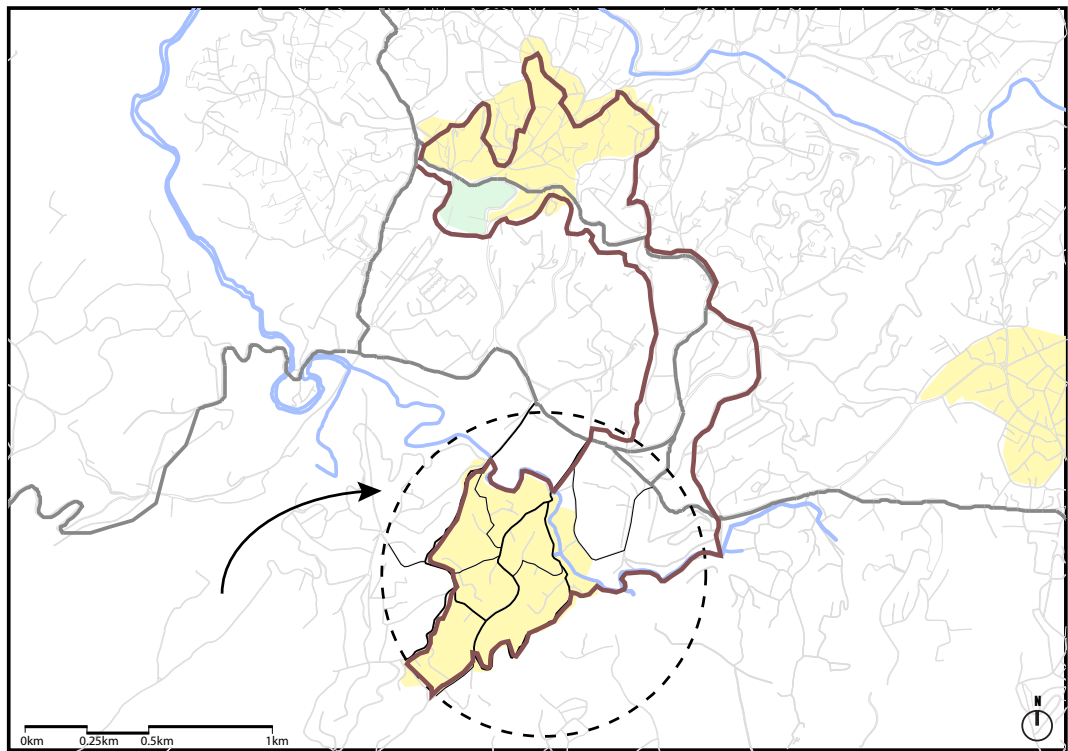


Illustration 15 : Location of Laban Locality

Source : Made by the author, Information retrieved from UP Department SPA. (2008) Strategic Development Plan for Hill Capital; Case Study - Shillong



Illustration 16 : Some of the original settlements which were dispersed in one of the oldest localities in the city now being encapsulated by multistoried apartments

source: Taken by the author

Laban being one of the oldest locality of Shillong since pre-colonial times is witnessing a change in the physical form from the quaint bungalows (Illustration 17) which once housed some of the earliest inhabitants of the locality is now witnessed to multi storied building apartments (Illustration 16) on small plots which ignore the complex topography of the hilltowns, the complex movement networks of the sloped topography and the social structures which exists in the area.

The threats which come with the coming of these new building apartments include changing social structure and increased density and hence more

pressure on urban services and a decline of the usage of urban street networks.

The competition for land in an area close to the business centre of the city has created a change in the typology of built urban forms from the low rise residential urban neighbourhood to the mid-rise apartment blocks. The loss of the old single storied and two storied apartments to the onslaught of urbanization have also compounded the loss of unique character and image of the place. The new urban forms are developed which ignore the complex relationship which the old urban form once shared with the topography and the so-



Illustration 17 : Locality of Laban with old urban fabric of small residential bungalows with new multi storied apartment blocks

source: Taken by the author

cial characteristics of the place. The "in between spaces" formed as a result of these multi storied apartments have resulted in a decline of the urban vitality of these street networks. Lack of eyes on the streets and activities happening at the street level have resulted into these places functioning as residual spaces.

In an article by River Wahlang in "The Shillong Times" a local newspaper, he says that it has been noticed that over the years some of the old educated Bengali families living in Laban area are moving out paving the way for the gentry from the Jaintia Hills community to develop tall mul-

tistoreyed apartments in the locality (Wahlang, The Shillong Times, 2013). He also points out the change in the character and identity of Laban, where once climbing down the slopes of the hills he could still see the spire of the old church but today has been hidden away because of all the multi-storeyed buildings around. This has contributed to a loss of image of the city pointed out by Lynch (1960) which thus leads to a decrease in legibility of the urban environment.



Illustration 18 : Public taps still in use

source: Taken by the author

Another change which has been seen in this locality is discontinuation of use of most of the public taps (Illustration 18) in this area which have resulted in decreased activity on these streets. Their significance and importance are not as it once was anymore. The pedestrian pathways have merely become a movement network and no longer serve a social value anymore. What can be seen from the picture above is that these public taps are not in a very ideal location since some of them are located next to the main road.

This creates a hazard of people competing for space with vehicles. People picking up water from these local taps are at risk of being hit by a car since the taps are located at areas where there is traffic movement.



Illustration 19 : Deteriorated public water taps no longer in use

source: Taken by the author

The image (Illustration 20) shows one of the few still in use public water taps in the area. Other areas such as shown in the image above (Illustration 19) shows the neglect and decay of such urban facilities. The reason for this as has been pointed out by one of the residents is because most of the water has been redirected to other areas of the city which resulted in decrease in water supply to some of these public taps.

The removal of these primary activity generators along the informal streets have resulted in a shift in the meaning of these streets from community



Illustration 20 : Public taps still functioning along the pedestrian pathways

source: Taken by the author

gathering spaces to just a movement corridor. The effect of no longer having to pause and talk to neighbours on these points and locations results in a shift in behaviour in these streets. The street is no longer a destination or a place but rather just a corridor.

The image above (Illustration 20) shows how the taps which are still in use are centres around which activities such as children playing on the streets are gathered.

The pressures of these original hamlets being located closer to the historical city core, urban growth and increase in population trends have created a slow change in the trends from the low density single storied units to the multi storied units because of their economic potentials (Illustration 21 shows the residential units being replaced by multi-storeyed building apartments). These new developments ignore the existing urban tissue and public space structure. This also has adverse impacts on the environmental aspects of the hilltown because these developments create buildings with lesser solar exposure, seismic vulnerability as well as soil erosion.

Most of these new urban forms are in the form of multi-storeyed RCC building constructions. Be-

cause of market forces on pressures for development on land and development of technology and availability of skill the new urban form we see are mostly multi-storeyed RCC buildings. They mostly conform to the building regulation bye laws which prevail in the state (Master Plan for Shillong (1991-2011)). These building regulations only mostly regulate height restrictions and building setbacks and completely ignore the topography of the landscape as well as the cultural and social characteristics which make up the urban fabric. Because of the rise of these developments, the quality of the public networks in hilltowns is compromised. It is for this reason that families are moving out of one of the city's oldest neighbourhood to give way to the onslaught of urbanization.



Illustration 21 : Replacement of the old house typologies with new multi storied building typologies

source: Taken by the author

What has been seen in most of these streets and alleyways is the decline of vitality and diversity to an active street life.

What once were the frontyards and access to the households as shown in the image below (Illustration 23) have now become the backyards for most of the informal pathways where there are no openings on to the streets and no relationship between the street and the built (illustration 21). The visibility and eyes on these streets is no longer present which creates security and safety issues.



Illustration 23 : The informal paths with connections to the households
source: Taken by the author

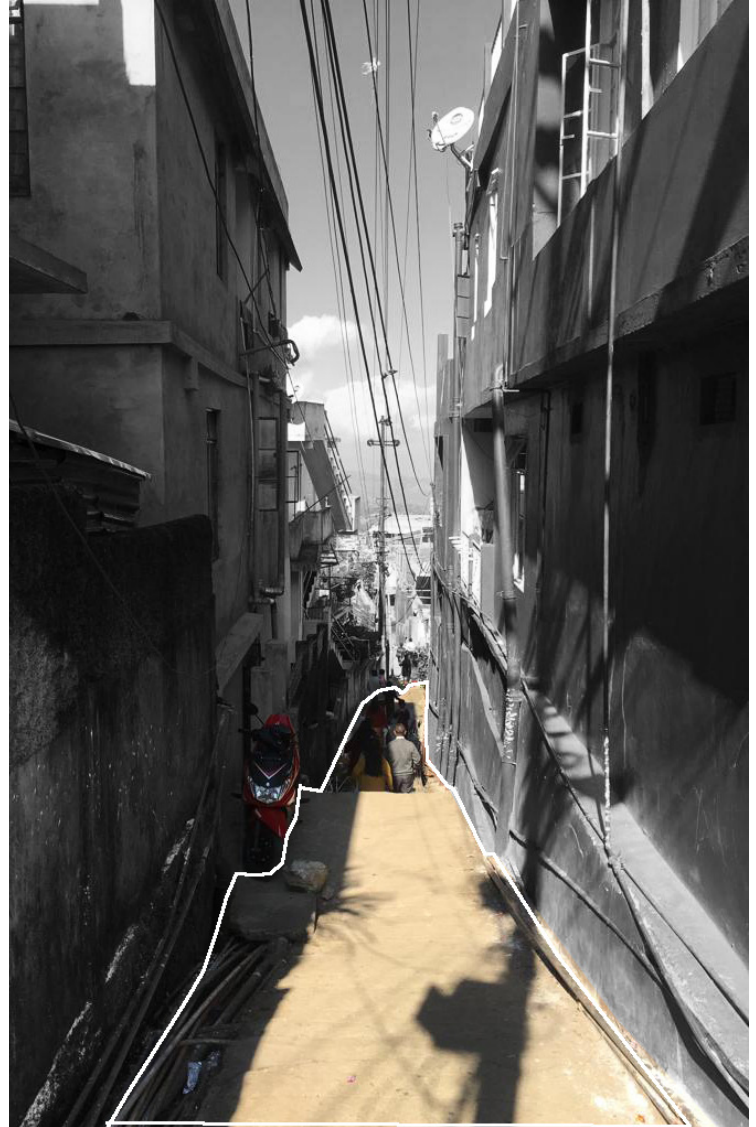


Illustration 22 : Absence of any access to the pedestrian street level from the multistoried buildings
source: Taken by the author

One article from a reporter from “The Shillong times” talks about the safety of the alleyways of the Laban locality. It talks about how some of the lanes have turned into a meeting place for miscreants. After dusk hoodlums gather in these dark alleyways and cause nuisance to the residents and also litter the place (The Shillong Times, 2018). One of the reasons for the rise of such activities is the neglect the streets are undergoing from the

people who use them.

Owing to the fact that multi-storeyed buildings are being constructed all over the place the pedestrian streets themselves lose their importance in the public life of the people. Hence, they become negative areas of the urban tissue with no urban activity. Without activity there can be no urbanity (Montgomery, 1998).



Illustration 24 : Non recognition of the in between public movement spaces

source: Taken by the author



Illustration 25 : Safety of the most important urban spaces of hilltowns is compromised because of the multistoried buildings being constructed

source: Taken by the author

The main access road for the neighbourhood is still being used for cultural events during celebrations and other festivities however the degrading quality of the street calls for a new strategy to develop to reanimate the qualities of some of these public

realms in order to gain a renewed identity for the neighbourhood.

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SHILLONG: The Lumkarkart Lane in Harisabha area of Laban has turned into meeting place of drinkers who create nuisance in the locality. After dusk, hoodlums gather at the 'L' shaped lane for their rendezvous. Though there are several street lights on the stretch, some of them are non-functional and drinkers take advantage of the darkness. The ruffians not only create ruckus but also litter the place. Recently, PWD (Public Wrod Department) workers cleaned up the wild vegetation along the lane and heaps of wine and beer bottles, cigarette packets and other wastes were found.

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By Janet Moore Hujon

To honour Laban's first MDC the late Ragland Singh Lyngdoh Mawlong, the *Shillong Times* reported the unveiling of a bust in his memory. (September 23, 2017) The photograph taken on the occasion says the bust is at 'Laban Batting Bazar parking lot'. This area now demoted to a mere parking lot was never ever a *batting bazar*. It was Laban's '*batti bazar*' - open for business after office hours and therefore a lifeline for local residents who could not always make their daytime way to lewduh (Bara Bazar).

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By R Wahlang

After the British established their new capital in Shillong in the 1860s, they identified Laban, then a small farming village, as the ideal location for their Indian government servants brought mostly from Dhaka, to settle in. The residents of Laban, unused to exposure of any kind to outsiders, moved away from contacts with the "dkhar"(non-tribal). Enterprising East Bengalees bought land from the locals at ridiculously low prices. Thus, a lady going by the name of "ka Tik" sold a huge plot of land to one such buyer for a princely

Non recognition of the importance of public places gives rise to what Relph(1976) calls placelessness. Places without any significance threatens the quality of public spaces in the cities and hence there is a need to approach places contextually and see what gives certain places their

identity (Ujang & Zakariya, 2015). It is seen in the neighbourhood of Laban, which is one of the oldest settlement of the city the decline of the locality from a prime location within the city to the degrading quality of the infrastructure and movement networks have resulted in a loss of its urban identity.



Illustration 27 : Pedestrian pathways that have become leftover spaces in the face of urban growth

source: Taken by the author

Comfort is an attribute of a successful urban space which include the physical comfort and the social and psychological comfort (Ujang, 2017). Comfort is an aspect of the image of the place which contributes to identity. The presence of resting spaces, facilities the maintenance of these areas and are what adds to the comfort of the area. The cleanliness of the place and presence of people in the public open spaces can promote a sense of safety which reduces fear. A clear demarcation between the private and public space is done either through territorial demarcation or natural process(surveillance) and the diversity of functions and activities. If a public space is not safe it may hinder attachment and hence identity of the place (Ujang, 2017).



Illustration 26 : Pedestrian pathways with no connection to the street level

source: Taken by the author

The emergence of such type of developments have further contributed to a diminished importance of the network of pedestrian movement and public space network. If urban development is allowed to continue in this mode of plot or area-based development without much consideration for the networks of movement and public space in between, then this would lead to a loss of one of the crucial elements which contribute to the identity of hilltowns.

space networks in order to re-establish the identity of hilltowns.

The images show how these movement networks are the source of life for the people and local inhabitants. It serves as extensions of the life inhabitants from the private realm of their homes to the public realm of the movement networks (Illustration 28). The local institutions(dorbar shnong) which are present also contribute to the maintenance of



Illustration 28 : Most of the public/semi public life happens on the streets which make them safer for children to play in

source: Taken by the author



Illustration 29 : The streets are maintained by residents themselves during the community participation events which takes place every few months

source: Taken by the author

All this change in the structure of one of the oldest townships of Shillong has created an urban decline in the living quality of one of the prime locations of the city which was once said to be known as being the heart of the city. The need of the hour is thus to reclaim and revitalize the public

these networks through community activities such as community cleaning initiatives. The presence of public amenities also assures ownership by the public on these areas.

The influence of users' roles is one of the most important aspects which is not noticed here as an influencing factor to the identity of the neighbourhood. This refers to those people who depend on the place either socially or economically (Ujang, 2017). As was also stated by Ujang and Zakariya (2015) that sense of attachment is also highly influenced by the users roles depending on their ethnic, racial and class identity which suggests meanings are categorized based on variations in the characteristics of the people (Ujang & Zakariya, 2015). The locality of Laban being a multi-cultural and multi ethnic locality demands for a more in depth investigation to understand the cultural characteristics of the people who live in the neighbourhood in order to get a clearer perspective into meanings ascribed by different groups of people. In place making process the collective and community attachment is regarded as a collective value associated to a place which demands respect.

Some of the public spaces in the city have been undergoing a slow rate of decline over the years and this has resulted in a weakening of the identity of such areas. The weakening of identity of such areas has led to the loss of importance of such areas. The dangers which stem from this are invariably a loss in the maintenance of the spaces and the outcomes of which are unsafe and unwanted spaces of the urban fabric.

Users dependency on such urban spaces are both economic and social and also contribute to increasing the vitality of such places. The example of such a scenario is what we see here in the image below (Illustration 30) which shows how locals use some of the open spaces as informal areas for selling their produce.



Illustration 30 : The area was once used as a market space and over the years it lost its meaning as the new market was constructed close to it

source: Taken by the author

One such example seen of this is the central area of the Laban locality which was once the location of the night market (Illustration 30). In an article published in "The Shillong Times", a local newspaper Janet Moore Hujon writes about how this market was once the sight of fresh produce, colourful fruits and vegetables and "silver-scaled fish all neatly laid out on green banana leaves" Places like these were where trade flourished she explains and underscored the meaning of the impression of "word of mouth" which was expressed with a sense of familiarity that is nonexistent in today's borderless universe of online shopping. One of the most unique features which existed in one of the old areas of the locality was the the "Bati Bazaar" which was a thriving market area where local residents could sell their produce. The unique feature of this market was the 'dongmusa' or traditional lantern which used to light up the market area showcasing how trading was done in days gone by. It was also the lifeline for some of the local residents who could not always make their day time way to the main market of the city. She goes on to say that it was also the interactions that occurred further underscored the importance of interacting with traders. Today this memory lives on only in the name it was once called, "bati bazaar" which referred to the night market.

However, the significance of such a place has been compromised because of the transformation that the area is slowly exposed to. Today it has been converted to a parking lot which bears no meaning to the significance or importance of the area to the different groups of people who once depended on it (Illustration 31).

The meanings of such places of importance are based on social and cultural construction of such places. Community attachment to a place will act as a major influencing factor which will help define sense of place. These values are continuously under threat of modernization and unfit regeneration of places which will lead to social detachment and places devoid of significance (Ujang & Zakariya, 2015). It is important to understand roles of cultural and social spaces imbued in the lives of inhabitants and users from past to present.

The locality is located in one of the oldest neighbourhoods of the city. This area is also one of the most populated areas of the city and most densely packed. It is also quite closely located to the commercial and business hub of the city hence competition for land in these areas have become even more crucial.



Illustration 31 : Public space turned into a parking lot

source: Taken by the author

2.4 Public Spaces of Shillong

Among urban areas public urban spaces are the areas that are most extensively used by citizens and they can take the roles of enhancing social quality of human life by making a similar sense of place for the urban community (Ziyadee, 2017).

There is a unique identity which is present in tissue level organization of the city which display a connection between the socio-cultural aspects of the people living in the region as well as the response of the built environment to the morphol-

ogy of the landscape.

The stepped streets as well as low rise buildings allowed for social interactions between neighbours as well as allowed for strengthening community ties. As pointed out by Scannell and Gifford (2010) people grow attached to memorable eras where important events occurred (Scannell & Gifford, 2010). To simply put is these were areas where locals could meet and have a conversation, thus strengthening the ties they had to each other and to the place.

As pointed out in the earlier section good urban public spaces are those areas that facilitate the needs of the users to meet their goals. As seen here the public realm which exists in the street networks facilitate more than just the users in achieving their goals of movement but also provide a realm which they can interact and converse with their neighbours.

The public realm is however challenged by the growing rate of urban development. The tearing down of old bungalows to be replaced by multi-storeyed buildings which cater to the growing housing demands, hospitality amenities, guest houses and commercial functions is a common sight to be seen throughout the city. This growth has further put pressure on the urban infrastructures mainly the movement networks which service these different new developments. These movement networks have originally been viewed as cultural and social spaces especially the pedestrian networks which contribute to the life and vitality of the city. These spaces provide the canvas on which the social activities such as people watching and exchange of pleasantries with neighbours would occur. The shortage of social qualities in open spaces may cause some losses of traditional characteristics of urban public spaces (Ziyadee, 2017).

The sketches on the left (Illustration 33) shows us how neighbours could interact with each other while at the same time maintaining an eye on the street activities. This gave the inhabitants a certain sense of ownership over the public spaces since their everyday activities would even spill out to these areas.

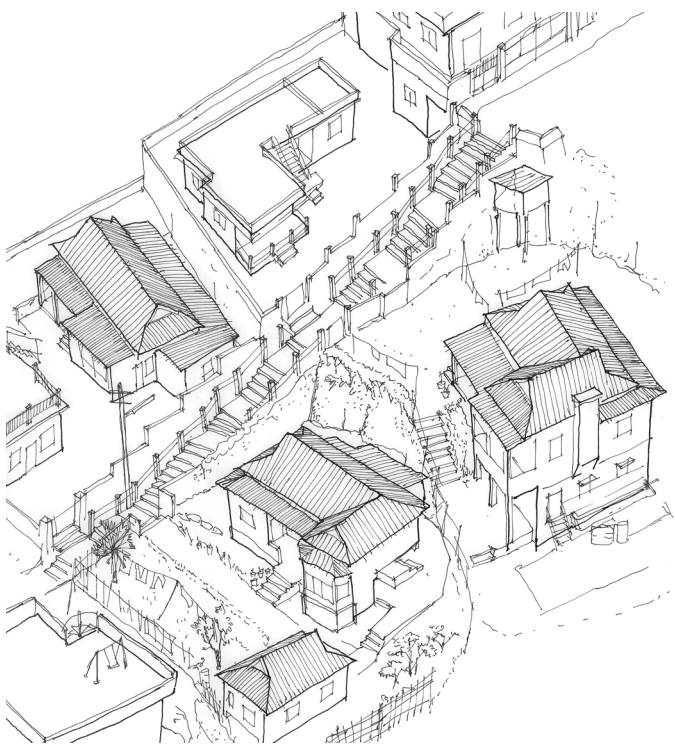


Illustration 32 : Pedestrian street networks
source: Made by the Author

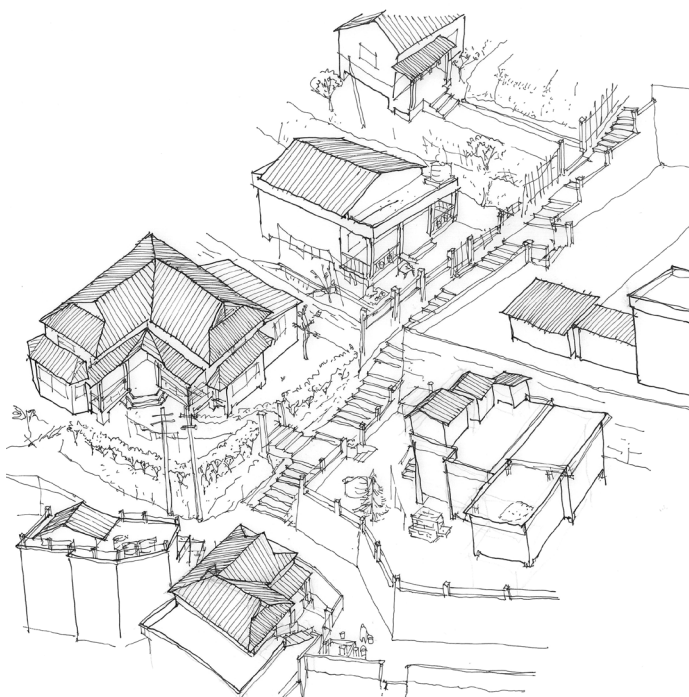


Illustration 33 : Pedestrian street networks
source: Made by the Author

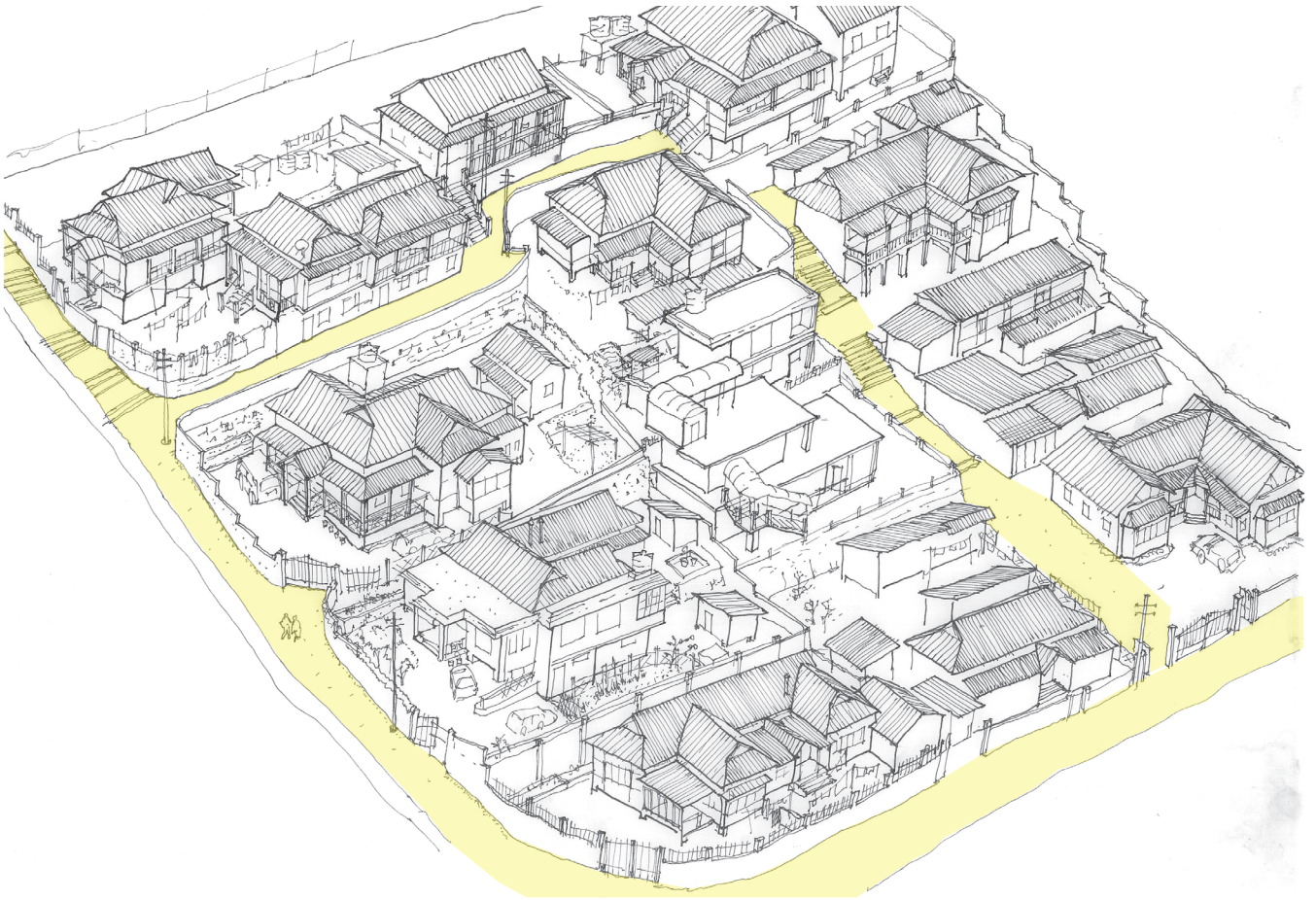


Illustration 34 : Interconnections between neighbours living in various building plots.

Source: made by the author

The diagram above and the image below (Illustration 34 & Illustration 35) show nature of the locality as it currently exists. The interface between the public street network and the private spaces shows the importance of the public space network which allowed for social interactions with the neighbours.

Now with the coming up of mid-rise apartments there is little room left for social interactions among inhabitants on the street levels.



Illustration 35 : The pedestrian network plays a very important element of the urban tissue.

source: Taken by the author

The City development plans of Shillong have planned for urban renewal of the old areas of the city which has seen little development since inception are at a risk of losing their unique identity as Shillong's oldest neighbourhood.

According to the CDP (City development plan) for the city of Shillong a proposal for urban renewal has been proposed for the inner old areas of the city. However, this only includes aspects such as widening of narrow streets, shifting of industrial/commercial activities from non-conforming to conforming areas and renewal of sewage and drainage and solid waste disposal for the old neighbourhoods.

Strategies for urban renewal based on the CDP of Shillong city are as follows

Strategies for Urban Renewal

- Shifting of bus/truck terminals at identified locations to the peripheral areas/proposed locations
- Shifting of wholesale market to the nearby peripheral areas/ proposed locations and integrating it with the truck terminals.
- Identification of parking areas in commercial areas e.g., for multi-level parking spaces
- Options for enlisting the partnership of private sector players for construction and operation and maintenance of truck terminals, parking lots etc;
- removal of encroachments and widening of roads wherever feasible/ required
- Improvements in traffic management
- Designing of intersections on scientific lines.
- Replacement of old and leaky water mains and pipelines
- Provision of dustbins in place of old and open dustbins
- Purchasing special container, dumper etc taking into consideration location specific economic and commercial activities for improved solid waste management services.

- Improvements in urban services like provision of drains, public conveniences, drinking water, street lights etc.

The old city area can be improved by:

- Decongestion of the core areas;
- Creation of pedestrian friendly environment;
- Improvement of linkages and connectivity;
- Improvements in urban services and
- Facilitation of movement of residents and visitors by proper integration of the public transportation system.

The methods proposed for renewal by the Urban affairs authorities for the rejuvenation of the old areas of the city cater mostly to the physical aspects of the built environment. A culture led regeneration strategy would be paramount for this case as it would cater to responding to problems related to loss of urban identity of an important area of the city.

In urban regeneration process the approach should be based on the different human experiences represented in a place through the physical elements and activities along with the socio-cultural and psychological components of the place. Therefore the regenerative strategies should not only be confined to the physical form and physical boundaries but encapsulate those who live in the places as well as the human experiences associated with them (Ujang & Zakariya, 2015).

The aim is therefore to propose at a future scenario for these pedestrian street networks which are undergoing urban decline by defining the tangible and intangible aspects of these informal pathways and using them to strengthen identity.

PAST



PRESENT

Connection,
Social value,
Private/Semi private realm

Movement, unsafe
in certain areas



Illustration 36 : The pedestrian pathways and how they once were
source: Taken by the author



Illustration 37 : The current state of these pedestrian pathways
source: Taken by the author

|.....▶ FUTURE

Recreation, cultural and heritage
value

?



pedestrian paths

Problem Statement

The trends of rapid urban growth puts a threat to the survival of urban identity present in cities. With the global phenomena of urbanization and commodification of services this puts pressures on the continuity of identity of some of the cities of the developing world which become unrecognizable in the face of urban transformation.

The current process of urbanization and urban growth are based on area-based development or plot-based development which are neither taking into consideration the complex nature of the topography of the landscape nor the social and cultural characteristics present in the current urbanized landscape. The non-recognition of the characteristics elements which exists in the urban environment results in the neglect of the in between spaces of the urban fabric which leads to a loss of urban identity.

The current trend of urbanization is creating a shift in the physical structure of the built environment from the low density low rise residential neighbourhood to a mid-rise high density neighbourhood. This change puts challenges on the form of the built environment. It changes the activities which occur on the street levels because of a change in the tissue structure and ultimately results in a change in the meaning and character of the streets from being the lifeline and the centre of public realm to being just interstitial spaces.

Research Questions

How do we propose a regeneration strategy for the older city neighbourhood of Shillong, India, by strengthening the characteristics of public space networks in order to reinforce the identity of hilltowns?

Sub Research Questions

SRQ 1

What is the relation between the morphological structure of the city and the functional structure of the city which helps create public spaces?

SQR2

What are the aspects of the informal paths that contribute to sense of place of public spaces and what aspects should be preserved?

SRQ 3

What are the qualities (mental, physical, social) present at the neighbourhood urban tissue level which add to the identity of hilltowns?

SRQ 4

What is a desirable future for these informal paths?

Aim

The aim of this thesis is to define the tangible and intangible aspects of the informal paths of Shillong and to use these aspects to revive the pathways as the social infrastructure of the city.

Outcome

The goal of this thesis is to provide a design solution for the pedestrian pathways in order to redefine the streets as the social infrastructure networks of the city.

The main outcome of this research is to create a design which will help identify characteristic elements of the urban fabric which contribute to the urban identity. The result of this will be a design strategy which can incorporate local characteristics and improve quality of life of the urban neighbourhood. This is aimed at restoring the sense of pride inhabitants had with their local neighbourhood as one of the oldest neighbourhoods of the city with diverse groups of people living together. This would help improve the social cohesion of the residents in the public space networks.

At the micro scale level this research will answer the question of urban decline in the existing urban tissue and will explore new ways of revitalising the derelict public space networks which are vital to the functioning of the social institutions at the local and neighbourhood level.

At the macro scale this research will try to utilise features of the landscape and natural settings in order to look at a strategy to bring back green areas into the city.



In search of an urban identity framework

This section will give a background to what urban identity means. It will also define a framework for analysis and design which is based on form, activity and meaning which are the aspects which contribute to urban identity. It will also describe the different theories of place attachment which contribute to an urban identity. It will also give a brief glimpse into the functioning of the local institutions(dorbar shnong)of the Khasi community

Defining Urban Identity

Some of the theories and concepts used for this research will help better understand a way of analyzing the urbanized landscapes in the context of hilltown settlements. The theories studied here will help understand the physical aspects of the study area and their contribution to urban identity as well as the psychological components which contribute to users' perspective of identity of such places.

We use different theories here to first understand what makes a place, what aspects are required for identity and lastly what are the indicators of identity.

Theories on place attachment help us better understand the relationships of the users and their connections to places. Users connection to places ultimately leads us to understand the level of dependancy individuals have on a particular place and how strongly a place is able to satisfy users needs. Lessons learned from place making and place dependancy help us uncover what aspects of the built environment which helps contribute to what elements of the urban environment will influence users experience in the urban environment. Whether he has a positive experience or negative experience in it will greatly influence the level of dependency he has with the particular place. Knowing that a user is dependant on a particular place helps us look for what aspects of the built environment he is dependant on. This could be anything from the physical to the non physical.

Identity is a component which is made up of tangible and intangible aspects. When considering the urban environment it is necessary to determine these tangible aspects in terms of the built form and natural elements of the place. The intangible aspects such as culture and traditions are discovered through an understanding of mental and psychological aspects of peoples perception of place.

Here we use two different components in order to work with the understanding of urban identity. The first component is an understanding of the physical components of the identity. Hence, based on theories from Montgomery(1998), Punter(1991) and Relph(1976) we can characterise identity in terms of the physical form, functional activities and the symbols and meanings of the built environment.

The second component deals with the psychological processes and hence we use theories of place attachment, place dependancy and sense of place. These acts as indicators of identity.

We need to take into consideration the physical and mental processes which happen while working with urban identity.

Heritage for hilltowns is based on an understanding what aspects have value. It is essentially the drawing of elements from the past to effectively become sources of inspiration for the present. What ever elements that have value and meaning to a society will be preserved and will essentially be shaped by contemporary concerns (Sutherland et al. 2002; Tweed & Sutherland 2007; Graham & Howard 2008). In light of this understanding we can persue what to value and what aspects to keep and what aspects to discard.

It is necessary to develop a framework to work under so that we can value our own interventions. This is discussed in the following sections.

3.1 Place

How does one make a good urban place and what does it take to add value to a place. Successful urban places have been discussed by Relph and Montgomery. It was said that successful urban places have certain indicators to denote that they are a good place. These indicators appeal more to our sensory feelings. These are brought about by sense of wonder, familiarity, surprises and intimate feelings (Sherman, 1988). These feelings are captured through certain attributes of a place such as secret places which makes one wander and discover more. These are also places which prevent loneliness but also provide a certain degree of anonymity. A good successful urban place is one that has long term effects for everyday user and not just feelings for a first time visitor (Benjamin, 1990). Hence there is something more long lasting in the physical and sensory feelings of a place that is not just limited to being in a particular place but also feelings that stay on even after leaving the particular place.

3.1.1 Value

In order to propose a future for these informal pathways we must first develop an understanding of what it is about these pathways that adds value to our quality of life in these urban areas. Value to a place is brought about by the shared experiences people have had with a place along with the level of attachment people have had with these places. Sherman has showed us what to look for when thinking about successful urban places but he has not told us why such elements are there. Understanding why these elements are there can help us understand the value

they provide. An understanding of value creation helps us make decisions on what aspects to keep, what aspects can be enhanced and what aspects can be discarded away. At its very core place making is a reflection of the aspirations of the collective and the community in reinventing and reimagining a place which ultimately helps in strengthening the relationship people have between themselves and the place they inhabit. The shared value people have with a particular place is maximized through place making.

3.1.2 Placelessness

As we will discuss in this section Montgomery describes the value addition to a place as being a result of a place fulfilling a users needs. How well a place meets a persons needs will directly influence how attached a person is to a particular place and how dependant he will be to a particular place. An opposing aspect to value addition can be known as placelessness which Montgomery describes as being a result of lack of importance of places and loss of place identity. Placelessness as described by Relph(1976) and Huston(1978) suggested that placelessness is an outcome of loss of meaning to places. When places dont become as important to people anymore that is when their level of attachments are not as strong anymore. Coined by Webber(1964) in 1964 the term of non place has been mostly attributed to the notion that accessibility has now become superior to proximity. What Webber essentially describes is the fact that when certain aspects of the built environment such as a place to pick up local groceries are accessibly by car or through online portals this eliminates the need

for proximity between the product and the end user. This has resulted in what Montgomery calls communities of interests than rather communities of place. What this essentially leaves us with is are spaces which are no longer connected by intrinsic value and dependent on each other but rather independent places working in isolation from one another. This results in places having lost their functional value.

The consequences of places having lost their functional value to people can lead to this sense of placelessness. This is exactly the case of what is happening to these informal pathways of hill-towns which causes this deterioration of the informal pathways. The conditions in which these pathways exists do not contribute to helping the residents achieve their functional needs and aspirations. Thus, we can effectively conclude that the more a place has value and is more important to people, the stronger the identity of a place.

3.1.3 Elements of place

The physical characteristics such as scale, landmarks, vistas, ornamentation and featuring, the way buildings open out to open spaces etc. is an approach or point of view mostly followed in the classical way of urban design. and is a very rational and objective way of urban design and designing good urban spaces. The emphasis of the physicality have been mostly the works of Cullen (1961). However others such as Christopher Alexander (1979) and Kevin Lynch (1960) put strong emphasis on the psychology of place bound up in the mental maps of the people. They as-

sociate good urban places reflect on peoples sensory feelings they have with places such as comfort, safety, quietness and vibrancy. Thus, we have so far concluded that to make a place we require the physicality aspects which relates to the objectivity of the place but this also includes another aspect which is more related to the psychological and mental aspects of place which is more subjective in nature. Jacobs and Gehl now argue that it is the nature of activities on the street life as well which dictate the quality of the urban environment. It was Jacobs(1961) who recognised that there are certain qualities of the activities which happen on the street life which also contribute to urbanity. She classifies them as mixture of primary activities, permeability of the urban form, mixture of building types, ages and forms and finally the intensity. So then we conclude with the affect that it is the physicality, the psychological aspects as well as the functional activities which happens in the street life which influence the quality of the urban environment.

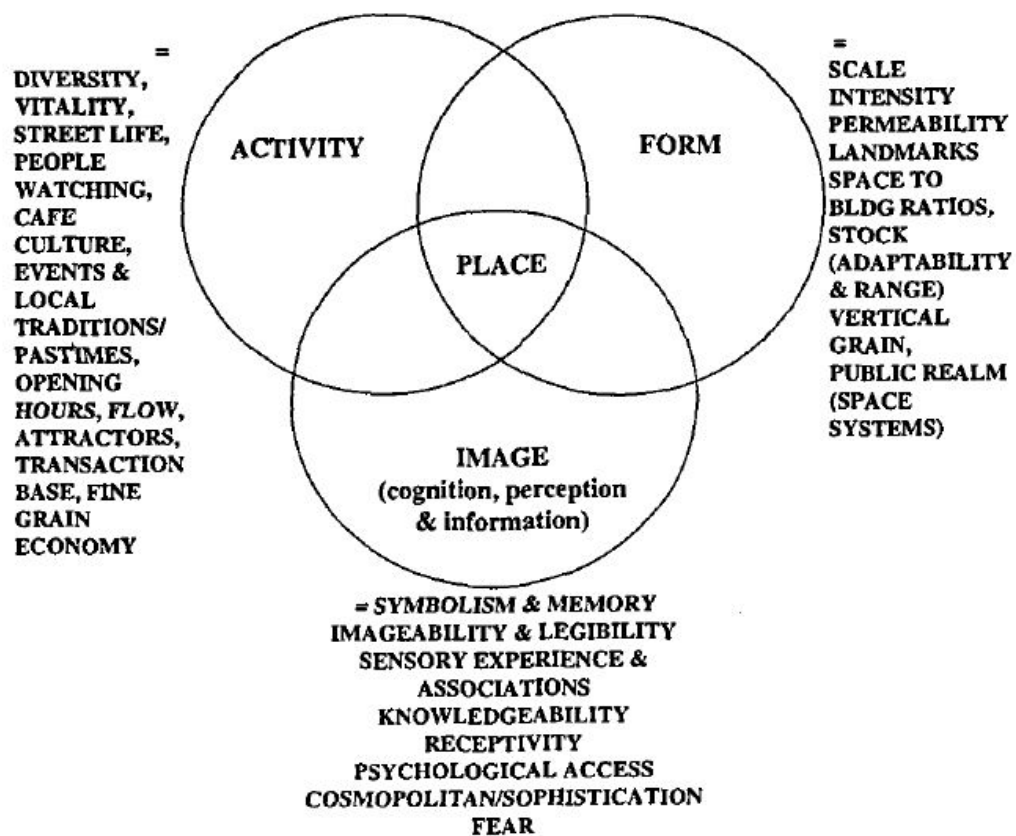


Illustration 38 : Place making elements

Source: Montgomery, J. (1998). Making a city: urbanity, vitality and urban design. *Journal of Urban Design*. <https://doi.org/10.1080/13574809808724418>

3.2 Place Identity

There are different theories which have contributed to an understanding of place identity. The basic premise in all of this is essentially looking at identity as being a result of tangible and intangible aspects of the urban environment.

Some theorists have had different versions and take on what makes the identity of places. As argued by Relph (1976) he has made the distinction that identity of a place is rooted in three interrelated components (i) physical features and appearances (ii) activities and (iii) meanings and symbols. Place identity are constructed out of the physical form, activity and meaning (Montgomery, 1998). Rapoport (1977) describes people experienced places based on physicality of the place such as material objects which gives them their preliminary experience of a place. Later on as people are more accustomed to places they experience these places in terms of the meanings derived from such places as well as the functions associated with these places. Valera (1997) described that urban identity consisted of both the "environmental image ability" and "social image ability" of a place which contribute to shaping users perceptions of such places. Since meaning is associated with a person's social and psychological processes (Stokols & Shumaker, 1981) then it stands to say that the aspects of identity of places are rooted in both physical components, functional components as well as psychological components.

Place identity also facilitates a feeling of self-identity and contributes to one's well-being and health. These commonalities are based on the shared history which the people have and reminds them of the shared experience (Hull IV et al., 1994). In the case of Shillong hill towns for example these commonalities exist in the historical aspects of the place. Important public spaces which were the centers of human interaction have slowly eroded away the sense of meaning from a place rich with history. The local market area which once held the night market had over the years been neglected to just a parking lot. Just another sight in an ever densifying neighbourhood. The onslaught of urbanization has left little room for such spaces to exist and only continues in the memories of the place which once held a strong identity.

Assessing the identity of places requires three categories (physical form, activity and image), combined to form the sense of place from which identity can be extracted (Shawket, 2016). Identity in an urban environment is defined by the

environment's elements or activities taking place within an environment. The more a city is built for the individual the less it seems to have for public life and the more a city is built for public entities the less the individual seems to count (Shawket, 2016). A good urban space should provide certain elements to cater to the activities of outsiders while allowing a strong sense of localism as well. This will help reinforce the identity of the place to both local residents as well as outsiders.

For residential buildings and urban spaces to be treated as an integrated whole the outdoor open spaces close to and surrounding these buildings must have a welcoming design that the stakeholders have a feeling of unity with space through creating identity in it (Shawket, 2016).

3.2.1 The physical

The physical features contribute to making places more legible to the users so that it can be identified, organized and navigated by people (Lynch, 1960). Legible cities will allow users to form a clear and accurate image of the place and help users orient themselves and navigate the paths, edges, districts, nodes and landmarks. Accessibility is another attribute of the physical form which is represented through location, access and layout of a place which contribute to the physical element of form (Ujang, 2017).

The urban fabric contains symbols or icons that tell us something about who we are and where we come from. Hull argues that icons in the urban fabric contribute to a sense of place identity and ultimately to self-identity, health, sense of community and sense of place (Hull IV et al., 1994). Hull states that in order to operate effectively in our environment we need to effectively read our natural environments in order to facilitate our goals. Thus, if the physical character of the urban environment promotes safety and comfort through the presence of streetlights and street furniture then these elements would be considered as positive components to identity.

3.2.2 The functional

This is a product of two separate but related concepts of vitality and diversity. Vitality essentially refers to an active street life. This corresponds to the number of people using the streets (pedestrian flows) and different times of the day, the different cultural events which takes place along the year and the different facilities and amenities which occur in the street life. The other aspect of vitality refers to diversity of uses. As Montgom-

ery pointed out that combination of mixture of uses and not separate uses are what contributes to successful urban places. This mixture requires a diversity of ingredients which depends on the demand to sustain wide ranging economic activity (Montgomery, 1998). The most lively and successful urban areas tend to be places of complex variety and a large representation of large and small-scale businesses. However, not all transactions take the monetary form and not all are economic. Good urban areas should also provide space for social and cultural transaction (Montgomery, 1998).

3.2.3 The mental aspects

Although every place possesses an identity and an image these two are not necessarily the same. Identity refers to the more intrinsic qualities inherent in the place and image refers to the user's comprehension of such places. Identity is a more objective thing based on what a place

where you met your significant other. Hence the place has a more symbolic value which is attached to it which is not only a result of the physical place.

To conclude the classical view of place making has been attributed to the physical object and manifested in urban design style, views, landmarks, vistas etc (Cullen, 1961). This resulted in a lot of objectivity in the logic behind place making principles. There was however also other theories which suggested that the cognitive aspects dictated how people rationalise the city based on their 'mental image' of the city as suggested by Lynch (1960) and Alexander (1979). This mainly attributes place making to the sensory feelings based on peoples feelings associated with a place. It is important to operate in both these levels of objective and subjective levels of design in order to fully comprehend a more holistic view of what urban identity is.

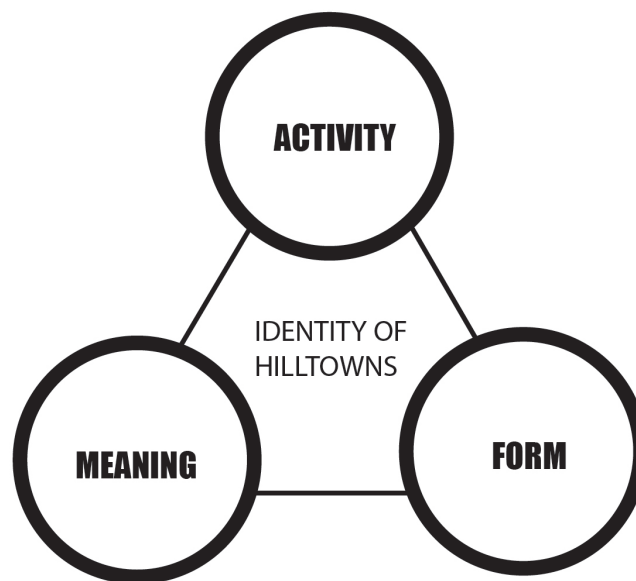


Illustration 39 : Identity framework

is actually like and image refers to how a place is perceived (Montgomery, 1998). Imageability is influenced by a place's legibility, distinctiveness, comfort, safety and security (Ujang, 2017).

It is not just the place itself however that contributes to the meaning but what can be experienced in the places that create place meanings (Manzo, 2006). For example it could be a place

3.3 Indicators of Place Identity

3.3.1 Place Attachment

Place attachment has essentially been defined as the bonding that individuals share with their environment (Scannell & Gifford, 2010). Place attachment is what contributes to a sense of place which is one of the indicators for identity of a place. Place attachment is embedded in the feeling, emotion and behavior reflecting the user's response to the physical environment (Ujang & Zakariya, 2015b). Hence, this aspect of the theory relates to the psychological aspects of place identity. While it has been argued that physical components of a place contribute to the place making principles (Ujang & Zakariya, 2015b), the psychological components (attachment and meaning) of sense place should be considered using place attachment principles to create memorable and meaningful places for the inhabitants who experience and live within these areas. Place attachment is not static but rather dynamic and changing over time (Morgan, 2010). Understanding place attachment principles would thus help us identify the intangible aspects of the place which are based on local characteristics such as people and place relationships. This tool of using the user centered approach to defining identity can become a powerful tool in regeneration strategies since place attachment also does increase the sense of ownership to the users.

Place attachment has been used as a worthy study for reference since its understanding contributes as a method to encourage the use of public spaces, such as pedestrian networks and other larger open areas. Understanding the rules of place attachment, we can begin to use these elements to enhance the use of public space.

Place attachment is a very vital concept here as it provides the link between meaning provided to a place and the imageability of the place. As described by Rapoport (1977) meaning and attachment are what contributes to what is known as imageability of a place (Rapoport, 1977). In the discussions about place identity it can be said that it is influenced by both the emotional and physical settings of the place. To secure identity there must be continuity in the social, physical and meanings held by the people. The physical features are a very important aspect of the sense of identity of a place since they contribute to the legibility of a place.

Loss of meaning to a place can have negative implications for individuals and collective

identity, memory and history and psychological well-being (Ujang & Zakariya, 2015).

Place attachment is thus described as a condition in which a place meets the users functional needs and support their behavioural goals (Williams, Patterson, Roggenbuck and Watson, 1992).

Place attachment concept is further discussed in detail to understand what aspects help shape place attachment and what aspects we had in order to create place attachment. This next section describes attachment as a **tripartite framework**.

Tripartite organization framework of place attachment

Scannell and Gifford have synthesized a multidimensional concept for defining more clearly the concept of place attachment. This three-dimensional approach to place attachment concept is organized around the person, place and process dimensions. The first dimension is the person. Person essentially refers to the actor who is involved. It is based on individual and collective held meanings. The second is the psychological process which is influenced by cognition, behavior and affect. The third dimension essentially refers to the place characteristics, what is the attachment to and what is the nature of this place (Scannell & Gifford, 2010).

i) The person dimensions

This refers to the attachment that occurs at both the individual and the group level. At the individual level it refers to experiences and realizations a person has had with the place. For example, a place where one has met their significant other or a place and what Manzo(2005) states that it is not only related to the place but experiences in the place as well.

At the collective level place attachment is expressed in the cultural/historical and religious values associated to a place by the community.

ii) The psychological process

The psychological process consists of three aspects as described by some authors (Jorgensen & Stedman, 2001) highlighted on the theoretical and operational dimensions which are affect, cognition and behaviour. They are explained in

detail below.

Affect-

This refers to feelings felt such as feelings of pride over the cleanliness of the neighbourhood or the general feeling of wellness or well-being by being in a safe neighbourhood. Further evidence that attachment is grounded on emotions comes from literature on displacement when individuals are displaced or relocated during times of war or natural disasters. Grief also comes from loss of an important place. It results in the loss of a tightly knit community (Scannell & Gifford, 2017). This is essentially related to how a place makes you feel.

Cognition-

The memories, beliefs and knowledge that individuals associate with their central settings make them personally important. Places where important events occurred. Meeting a best friend (emotional feeling), exercise or jogging (functional meaning), place for joy or to forget problems (emotional meaning) or a place to connect with neighbours (socio-cultural meaning) (Moulay, Ujang, Maulan, & Ismail, 2018). This is essentially based on our reconstruction of a place based on what important events happened in the place.

Conative/Behaviour-

Attachment is expressed through actions. The proximity maintenance behavior which characterizes the level of attachment to a place and also the duration of engagement with a place. The behavioural aspects of attachment to a place is thus reflected in how close a proximity a person still wants to be with a place or frequency of journeys or visits to a particular place.

iii) The place dimensions

This has typically been divided into the social and physical aspects of place attachment. The physical and social aspects of place attachment have to be studied at three different scales of study (home, neighbourhood and city) (Scannell & Gifford, 2010). Factors which influence place dimensions of place attachment are density, proximity to amenities and other social arenas influence (Scannell & Gifford, 2010). Place symbolizes one's social group. Spatial bonds become important when they represent social bonds.

Numerous studies indicate that place attachment attributes in an area contributes to better civic activities within residential areas in the form of sustainable behavior and helps to decrease uncivilized behavior. Place attachment

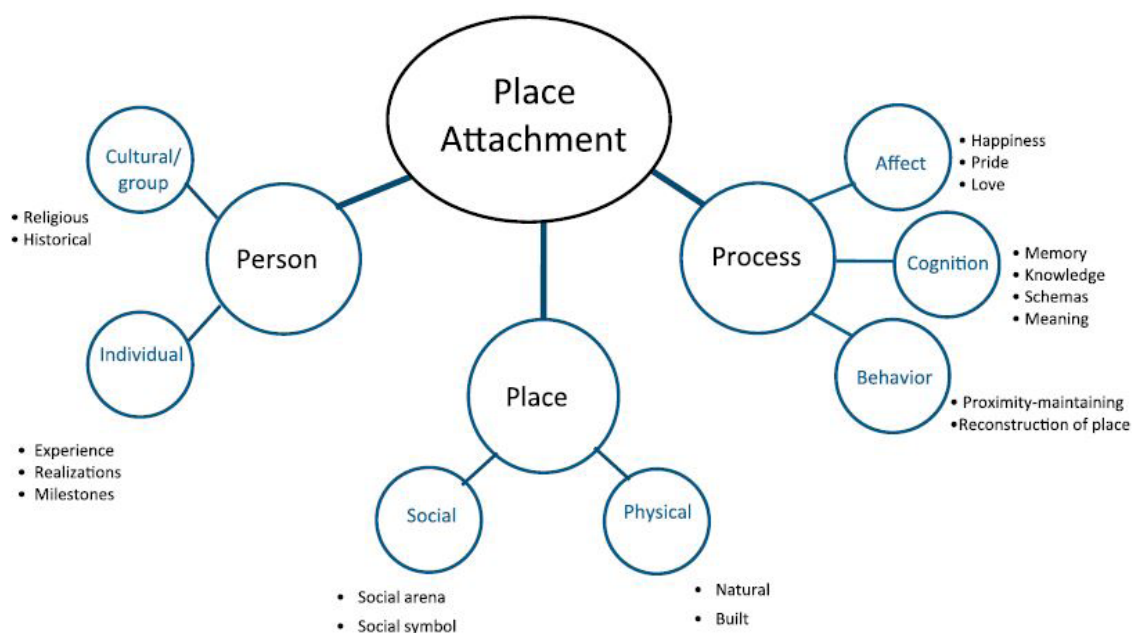


Illustration 40 : The tripartite organizing framework

Source : Scannell, L., & Gifford, R. (2010). Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology*. <https://doi.org/10.1016/j.jenvp.2009.09.006>

can be noticed through emotional investment in the neighbourhood such as seen in the unique identity of hilltown settlements and keeping the neighbourhoods clean and well maintained. In order to increase attachment towards a public space it is important to give a special attention to the functional attachment aspect (Moulay et al., 2018).

Shared public spaces are crucial for sociability and foci of entire communities. The new urban agenda for the next two decades is to emphasize on provision of public spaces in terms of responsiveness and inclusiveness (Moulay et al., 2018). One of the critical human needs is the opportunity to socialize and the provisions of such places is crucial to the advancement of livability (Ellis & Roberts, 2016).

As highlighted by Ujang(2015) in the production of urban places the more important aspects which are considered are the quality of the physical components but not much attention is paid to the meanings and attachments in the planning process. It is important to highlight the characteristics which are important to users in order to maintain a continued attachment and hence the aim is to avoid losing such characteristics. Diversity affects user's attachment to certain plac-

es as well since it offers different types of social interactions. Cultural spaces imbued people's way of life and devoted cultural phenomena are vital to place identity (Ujang & Zakariya, 2015a). Thus, the mental aspects of place attachment contributed to place attachment.

3.3.2 Place Dependency

Place dependence indicates the importance of place in providing the features that support the specific goals of users and their desired activities (Stokols & Shumaker, 1981). This is related to the *functional quality* of the physical elements and the *activities* that are distinct from any other places. How well a place supports the needs of the users will directly influence the level of dependency on the place. For example, in the case of hill towns the junctions of the stepped streets and the vehicular networks usually encourages local shops to be present which facilitates trade and meeting points for local people as well as serving as clear landmarks. The pedestrian networks also facilitate permeability of the urban tissue and encourages more interaction and chance encounters among neighbours.

Place dependency ultimately stems from aspects of functionality and ability of a place to meet a users needs. The more a person is dependant on a particular place it can be argued that this place has some significance to him and has some functional and psychological value to him.

The theory of place dependency describes frequency of visits, levels of familiarity and degree of attraction (Ujang & Zakariya, 2015b).

The first aspect, frequency of visits to a particular place, is based on how well a place meets the functional requirements, that is to say that it offers a diversity of choice which is very well received by the people. In short, it is based on the activities present in the place. But it is also not only choice which influences peoples frequency of visits to a place. It is also based on the comfort which the place offers and how this best meets the users needs. The safer the pedestrian networks are the more attractive they will be for pedestrians to utilize them. Similarly, this will also impact the frequency of visits and thoroughfare of pedestrian which will then contribute to encouraging activity.

The second aspect, the level of familiarity of a place, is more dependant on the users perception of the place. How familiar you are with a particular place is primarily dependant on two things. The first is how many times one visits the place in order to know it well enough and the next is based on how legible the place is in order for one to make his way through. The latter is based more on the sensory aspects of the environment such as sight, smell and touch. Hence, it

is also the physical characteristics which contribute to this understanding of familiarity.

The third aspect, degree of attraction, of a particular place is based on comfort a place offers the user. How well a place is organised in terms of safety and security with eyes on the street (Jacobs, 1960) is a great contributor to the comfort level and thus attraction level of a particular place.

We can then conclude that most of the attributes of place dependency are influenced by the activities and functionality of the place. As stated earlier place dependency is highly dependent on how a place satisfies our goals and these goals are very specific to user activities and needs.

3.3.3 Sense of place

Some authors have argued that sense of place is not intrinsic to the setting itself but is derived from the users interpretation of the setting which are constructed through their experience with it (Stedman, 2003). What begins as an undifferentiated space becomes place when we endow it with meaning. Humans ascribe meanings to places based on their experience with it. Meanings are not inherent in the nature of things but are socially constructed (Stedman, 2003). The physical features do not directly influence the sense of place, but they often influence the symbolic meaning of the landscape (Stedman, 2002).

Because different people perceive different things differently hence sense of place is very deterministic on what elements of the place people are more connected to. For example if one person is more attracted to environmental aspects of place another may have other connections to the social aspects of the place. Hence the physical environment of the place plays a very crucial role in creating sense of place.

For example, in the hillstate of Meghalaya, India, there are certain forests in the state which are held to be sacred grooves or sacred forests by the clan members of the indogineous people. This has resulted in a kind of reverence to the forest as being something to worshiped as a deity. Hence, no harm comes to the forest and it is protected from human interference. This is how meaning can influence the sense of place.

Three component view which weaves together the sense of place, the physical environment,

human behavior and social/ psychological processes (Stedman, 2003). Although social constructions are important to creation of sense of place they hardly arise out of thin air (Stedman, 2003). It is a result of the user's interpretation of the physical environment that give meaning to the physical space.

In urban areas the public urban spaces are the places that are most extensively used by inhabitants. The quality and livability of these spaces are what contributes to sense

of place of the urban community. Hence, the sense of place is imperative to contribute to a sense of familiarity among different members of a community (Ziyadeh, 2017). In the case of Shillong these stepped streets are where these commonalities are shared. A decline in the quality of these spaces results in a loss of importance of such places which results in loss of community identity and collective identity.

3.4 Meaning in the city

In order to bring some of these intangible concepts of place attachment, place dependency and sense of place to a more understandable level of how it influences form in the urban environment Kevin Lynch's method of reading a city is used. This was aided by the help of breaking down of the city image into recognisable elements in the urban environment.

People perceive the urban environment through their own mental image of the city. Although there are many ways through which people can perceive how a city is construed either through its social, economic or political. However, this method is most suitable in order to relate the mental images to the physical setting and urban environment.

Kevin Lynch describes the forms of the physical setting into five categories.

Paths

These are the most predominant of all the elements of the city and mostly corresponds with the level of familiarity of the area. They are usually the lines through which an observer travels along, "they may be streets, walkways, transit lines, canals, railroads." (Lynch, 1960)



Edges

These are usually the breaks in between two different areas and represent a break in the continuity of an area or region for example shores or railroad cuts. "Edges are linear elements not considered as paths by the observer." (Lynch, 1960)



Districts

"These are the medium-to- large sections of a city considered to having a two dimensional extent" (Lynch, 1960) The observer can enter and exit these areas and have a distinct identifiable characters both from within the area and outside.



Nodes

These are the strategic locations in a city to which an observer is travelling to or from it. They may be "junction, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another" or they "may be simply concentrations, which gain their importance from being the condensation of some use or physical character" (Lynch, 1960)



Landmarks

Landmarks can be considered as points of reference for an observer. One does not necessarily enter them but they serve as a marker for orienting one's self within the city. They may be anything from a "building, sign, store or a mountain" (Lynch, 1960)



We can use Kevin Lynch's theory on image of the city to better understand the constructs of how psychological components of the urban identity is read in the urban environment.

Together these aspects help us produce a mental picture of the external environment and is produced not only through immediate sensation but also through recollections of past events and experiences in these places (Lynch, 1960) This theory will help us better understand how the physical aspects of a place contribute to an understanding of the mental aspects by which we use to shape our urban spaces.

3.5 Citizen participation and grassroots governance

This aspect needs a diving into because the state of Meghalaya has a unique condition of governance compared to the rest of the states of India. Here the tribal institutions which are known as the “*dorbar shnongs*” play a very crucial role in the maintenance and the operation of all public affairs at the locality level. Hence, any improvements to the public spaces within the community level would involve the tribal institution(*dorbar shnong*) and would require consent from the community members. Therefore an understanding of the presence of such a entity is crucial to be aware of when talking about any renewal or revival of the public space networks.

Tribal institutional structures in the areas of the North East

One of the most striking aspects which contributes to the cultural identity of the people of Shillong is resilience of their tribal institution of governance which is called the ‘*dorbar shnong*’ which has existed even before the advent of the British to this day and is more integrated to the modern system of governance.

The system of governance in Shillong is complex which involves three system of government functioning in the same area.

i) The local government functions within the municipal boundary which has remained unchanged since the time of the British. This is mainly due to the fact that the tribal institutions do not want to lose

their authority (Shullai, 2015).

ii) The District Council which are constituted under the provisions of the Sixth Schedule of the constitution of India. The Sixth Schedule under the constitution provides for the indigenous tribes to have control and manage all round development of their society in a manner conducive to their customs.

iii) Lastly the tribal institutions at their individual level form competent models of small scale governance. At the neighbourhood level the city of Shillong is constituted into areas called as *Shnongs* with their own traditional governance system called a *Dorbar Shnong* headed by a headman called a *Rangbah Shnong* who is elected by voice voting by citizens of the particular *Shnongs*. The other members of the *Dorbars* are also elected by the same medium. Even though the elections are endorsed under the guidelines of the community these bodies are not constitutionally recognised and enjoy no legal status. The local communities entrust the *Dorbars* to oversee multiple urban and social affairs such as maintaining law and order, preserving common properties of the community and delivery of urban services.

This decentralized system of governance is one of the most important aspects which contributes to preserving the cultural identity of the hills tribe people. They also feature a system of citizen participation which provides an opportunity for integration into a more holistic planning for the city.

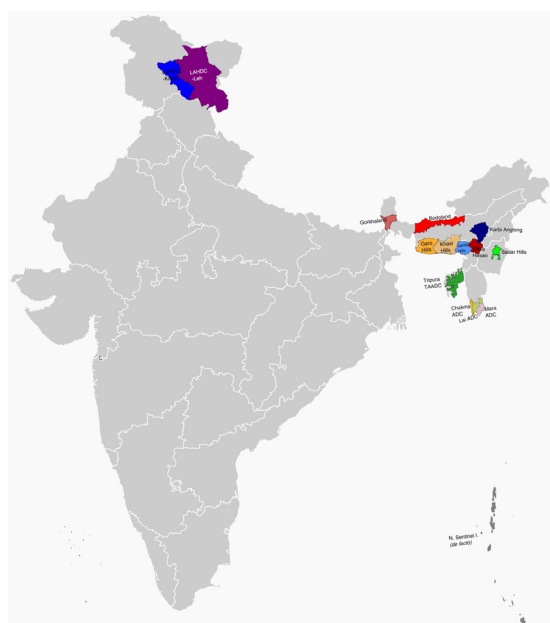


Illustration 41 : Regions in India which fall under the sixth Schedule areas and have Autonomous district council

Source : https://en.wikipedia.org/wiki/Autonomous_administrative_divisions_of_India

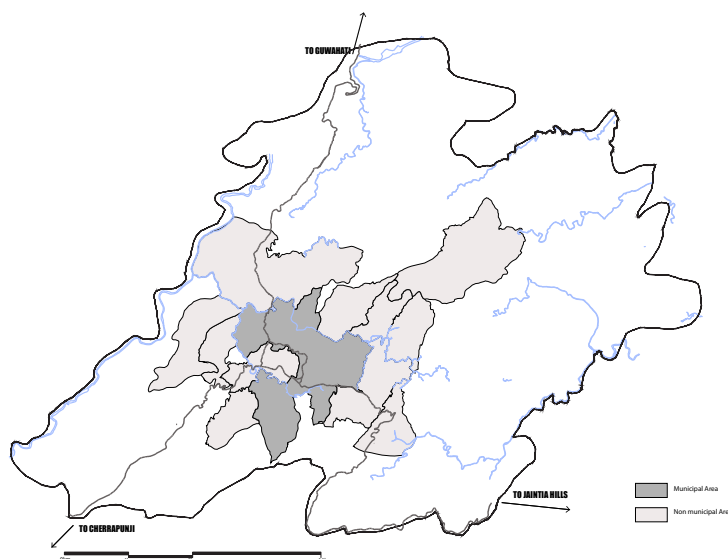


Illustration 42 : Municipal boundary and other Census towns within Shillong Urban Agglomeration area

Source : Made by the author, Information retrieved from Department of Urban Affairs, Government of Meghalaya

The way in which these tribal institutions work is also linked with the concept of community participation in the different localities. The urban structure at the tissue level facilitates the interactions between neighbours and enhances the sense of familiarity with neighbours when dealing with such cases of community participation of the locality.

Events such as cleaning drives are organized by each community and brings members together to participate in this collective act once every few months. The sense of familiarity with neigh-

bours which exists on the interface between the pedestrian stepped streets and the private areas of the residential units is exactly one of the attributes of the physical form which facilitates a sense of familiarity within the community.

Citizen participation plays a major role in the culture of the city of Shillong and for the state of Meghalaya. It gives the citizens a voice in the management of their local community urban spaces in a way that ensures a kind of collective ownership of the public spaces.

3.6 Conclusions

So summing up, the place making attributes of a place are achieved by bringing in together two components. The *physicality* of the urban environment and the *psychological* aspects which contribute to the building up of identity.

These physical aspects constitute the tangible aspects which we can define here are the *form* and *activity* which are the most apparent aspects of these pedestrian pathways. The psychological components constitute the intangible aspects and are the *meaning* which is associated with these places. The meaning and imageability was uncovered by using the theories provided by Lynch on imageability of place and uncovering how meaning was interpreted from the mental maps prepared by people. The most imageable elements of a place are drawn out and people describe why each of these places are important to them.

The theories on place, place identity and indicators of place identity provide the theoretical base on which the urban identity can be measured. For example, learning of place attachment contributes to our understanding of what aspects of the built environment we value and which elements give meaning to the built environment. The understanding of place dependency helps us understand what activities present in the urban environment helps us achieve our goals. Lastly, the understanding of sense of place shows us that it (sense of place) is not only a social construct but it is also a physical construct which the users interpret to give meaning to the built environment. We can call these different theories as

the mental aspects.

The definition about identity which is derived from theories by Montgomery, Replh(1976) and Valera describe identity as a product of form, activity and meaning. We can call this framework as a tool to design new urban environments with a certain kind of identity.

Thus, the mental aspects act as indicators for urban identity and we can use this identity tool as an instrument for design.

So, combining these two aspects of indicators and elements we can see (described in Illustration 43) how form in the urban environment contributes to sense of place, how the activities contribute to place dependency and how meaning in the environment brings about place attachment.

What is suggested in the research is that place identity contributes to an increased sense of community which are based on criteria of commonalities. This is exhibited in the sense of shared pride among a community of its local identity and characteristics. Thus, we can see how the system of governance which is based on the grassroots level of participation can contribute to a better quality of urban environment. It is very important for implementation of any kind of strategy in the built environment to include the community as the drivers of this change as the governance system plays a huge role in the maintenance of such interventions.

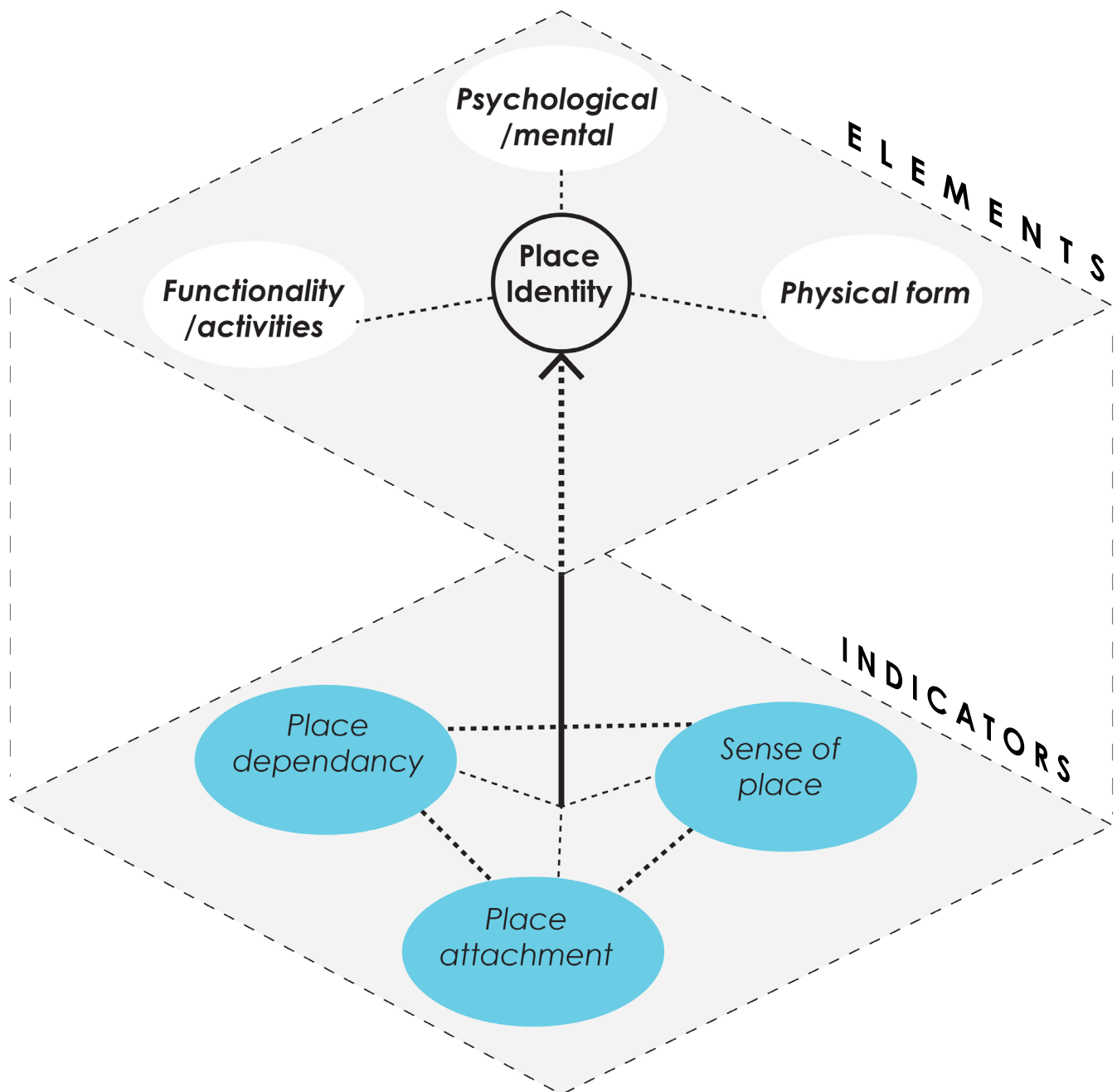


Illustration 43 : Diagram showing how the different theories align together in order to operate with the proposed identity framework

Source : Author

This theoretical framework is based on two components which is conceptualised in the illustration depicted above (Illustration 43). The first component is the elements which make up identity which are described in terms of the physical form, the functional activities and the meanings and symbols associated with the place. The second component are the indicators which help us identify what makes place identity. These are discussed in

terms of place attachment, place dependency and sense of place.

Together these form a theoretical base through which we can use to design an urban environment with identity.

Societal relevance

Identity of a place is a social issue and it is this what helps us reinforce our sense of self-identity. The narrative and identity approach to urban development could help boost the cultural importance of a diminishing ecological and cultural landscape. Such an approach would help reinforce the self-identity of people living in such areas, thus improving peoples sense of togetherness in a community with many ethnic backgrounds living together. The local population which mainly consists of tribal communities has always traditionally held high regard for nature as well as community participation in maintaining their collective physical environment. Shillong has always been a city with various peoples living together ever since its earliest days. A loss in identity would hugely damage the shared history people have had together in a community with so many ethnic backgrounds. The unique character of the public spaces in the hilltowns are what binds the different cultural groups together. Finding a framework to enhance the importance of these cultural icons would help reinforce the collective identity of the community together thus bringing in inclusion and cultural diversity. Public spaces in cities are very important to quality of life and improving on their identity would improve on the general morale of the people. This research is essentially important for society because people living in hilltowns can better improve on their living conditions through a better quality of public spaces. The sense of neighbourhood and community bonding is further improved on by this.

Scientific relevance

Most of the policy discussions concerning urbanization have mostly focused on megacities. This research takes a look at the hilltowns of India and a specific case of Shillong. Hilltowns are areas in India which are experience urban growth rate at a much higher rate than the rest of India, although their urban populations may not be as high as the huge mega cities their vulnerability to the onslaught of rapid urbanization trends is still a matter of concern. The rapid growth and expansion of such centers is not only attributed to population growth and migration but also the reclassification of urban areas. Such areas lack the administrative or institutional machinery to tackle the challenges brought about by rapid urbanization trend. New emerging centers such as the case of Shillong pose a challenge because of their unique cultural identity. There appears to be a threat to the survival of the cultural identity of hilltown settlements, which exists in their network of public spaces and pedestrian pathways, because of global phenomena's such as rapid urbanization, globalization and commodification of areas. This results in the loss of identity of a place which also contributes to loss of self-identity of inhabitants living or working there which has impacts on the community well-being and self-well-being.

This research looks at informal pathways in the case of hilltowns and how we can define the tangible and intangible aspects present on them in order to be able to define their identity. Informal pathways exists everywhere in the world and using such a method of using the form, activity and meaning as as a guiding principle can be very helpfull when considering other situations or other hilltowns. We know that every public space has its own characteristics in terms of its physical nature and functional aspects. But all of these aspects are also rooted in the meaning of such places. Therefore this research can be very beneficial for other cases where we have informal pathways.

Ethical considerations

While this research looks at the importance of maintaining the unique cultural identity present in hilltowns one cannot overlook the importance of facilitating the cultural diversity as well. This is not to say that urbanization process always results in the loss of cultural identity of a place. In most cases in some countries cities are the places with the most variety of cultural diversity. Even in the case of Shillong itself the trends of urbanization have led to cultural diversity to thrive and flourish. However, what is highlighted here is the loss in sense of identity by not recognizing some of the most important elements which make the identity of hilltowns. While not all stakeholders may agree to this owing to the fact of market interest it is important to point out that this framework would help steer new urban developments by recognizing the importance of place attachments and place identity in cities.

If we are looking at an outcome where there is a resilient urban environment we have to understand who this resilience will be for and who are the important stakeholders who will benefit from this kind resilience.

Coming from the region of study my attempt here will also be to be aware of any kind of personal bias I may have in the analysis and documentation towards the area. I wish to look at the study area objectively although I am aware that, coming from this area, this may have an influence on the interpretation of the data. Hence, the theory papers provide me a base on which to gauge such interpretation of the data.

The attempts of this thesis in terms of extraction of information and data from local residents and resource persons is not only meant as an extractive process but is done in the intention of adding knowledge for the improvement of the area itself.

This research is predominantly focussed on the pedestrian pathways and it tends to favour the walkability of the cities over the vehicular movement however, this should not take

away from the fact that vehicular movement is also an important aspect to consider because the interventions proposed should not miss out on the elderly members of the community. Most of the areas of the localities are inaccessible to vehicular access and it is an inherent wish by most of the residents to be connected by vehicular access. Hence one must be aware of the relationship of a balance between these pedestrian friendly informal paths and the vehicular access roads.



4

Methodology

This chapter describes the research methodology and the research methods used in order to answer the sub research questions

4.1 Research introduction

The starting point of this research was based on my own experiences with the informal pathways in hilltowns and how the slow decline of activities on these informal paths have led to a drop in the importance of these paths as the social spaces of people and have now become the in-between spaces.

The physical degradation in the urban environment in Shillong city is the result of loss of a sense of place of a location, which Relph (1976) describes as placelessness. This invariably means the loss of identity of a place. Hence, the first method in this approach was to understand what aspects contributed to identity. This was done through literature review on the subject of identity. Identity is a product of both the physicality of place and the psychological associations people attribute to a place. Hence, it was necessary to include both these lines of inquiry into the methodology.

The identity of a place based on the physicality of the place is studied through the elements of place identity, and the psychological dimensions which are studied through the indicators of place identity which are brought about by the users interaction and experiences in the place. Literature review is done on the existing theories on place making, place identity and indicators of place identity in order to understand both the physical and the psychological processes which make up urban identity.

The theoretical base used for this research is built on the understanding of how place identity contributes to the preservation of the heritage values of the place. Understanding what aspects of the urban environment contribute to the identity of a place, we can therefore use these tools to decide what aspects to preserve, what aspects to remove and what aspects to improve on.

The elements

A framework for place identity is proposed based on form of the physical environment, activity and meaning. This is based on the literature review mentioned in the chapter 3 of this report. This framework is used as a tool to explore and define urban identity in the context.

A design tool is developed which combines the form, the activity and the meaning of the urban environment. Hence, this tool or framework (form, activity and meaning) proposed will be used to analyse the characteristics of these informal pathways. This is further used to evaluate the design interventions proposed in the later section.

The *form* is analysed through a morphological study of the built form of the city. This is done by mapping the movement networks in the city, topological mapping and built form.

The meaning is analysed through the Kevin Lynch's methods of the image of the city in order to uncover the meaning and imageability of certain places. Mental maps made by residents will help uncover some of the meanings to certain places. Using theories of place attachment and place making, meanings associated with the particular places can be ascribed to gain further insight into the local community's attachment to important activity points. This is done through a historical analysis of the area and conducting interviews with the residents.

The activity is studied through mapping of functions and land use patterns in the locality. Together with the field study the observations made on site will help uncover some of the important activities which are valuable and improve on the identity. Together with this observations and mapping of land use and activity patterns will help determine people flows and important points of the urban fabric.

The indicators

The indicators component of the are summed up into place attachment, place dependency and sense of place which captures some of the important attributes which add to the identity. These will discuss the mental connections and experiences people have with the place.

The research method will then involve analysis of the current problems which create degradation of the public spaces. Physical degradation of public spaces of Shillong is a result of a change in the form, activity and meaning of the place. Thus characterisation on the problems is done. This is made using visual analysis of the area and literature review on the trends in the city (Shillong). With this overview the problem statement is written, and research question is stated along with relevant sub questions.

4.2 Methodology

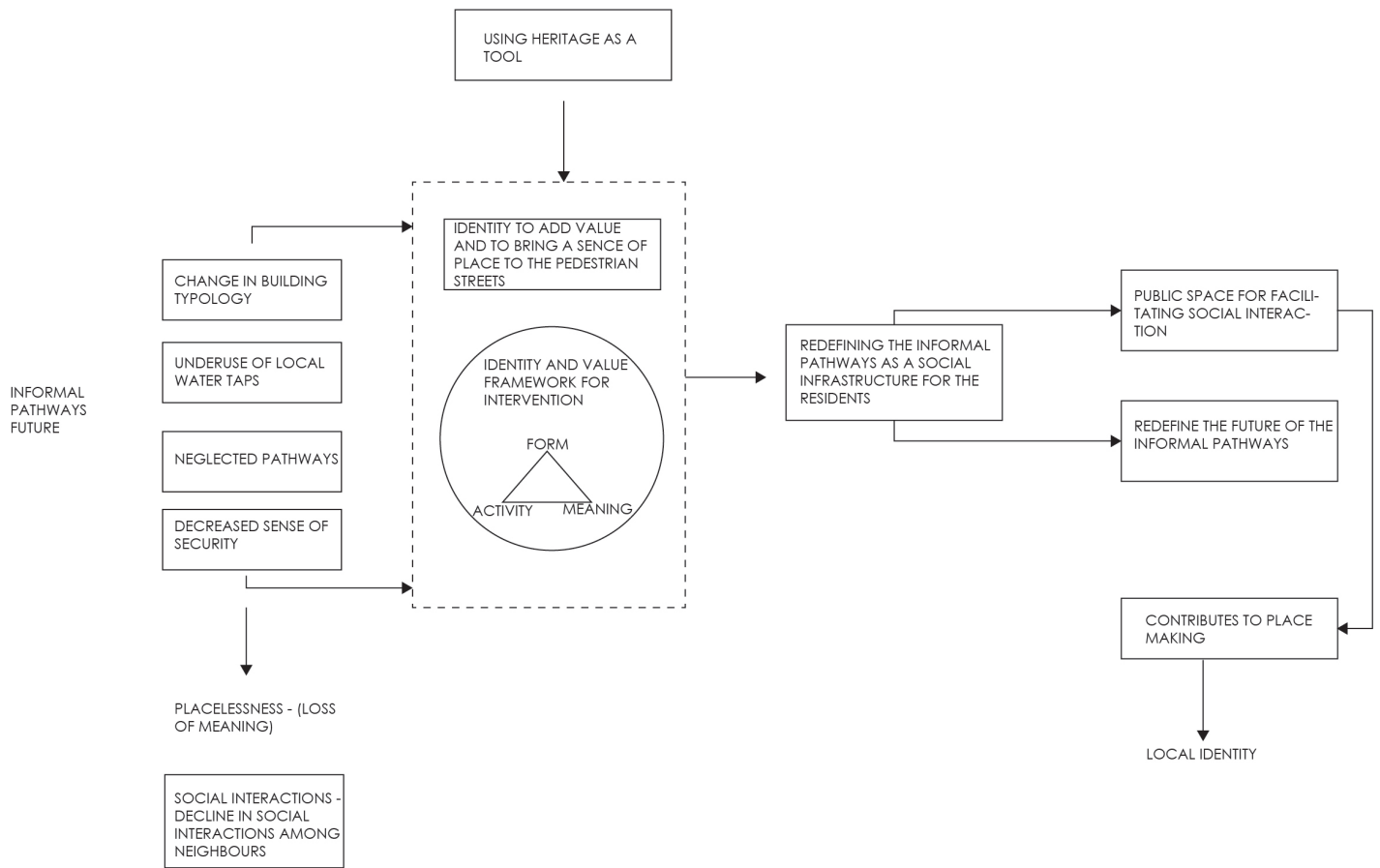


Illustration 44 : Scheme depicting the line of research

Source : Author

The line of inquiry for this research stems from the current trends and problems prevalent in the research area (illustration 40). This results in what Montgomery terms as placelessness in the urban environment which results in decrease in social interactions among neighbours. The need is to negate the impacts of placelessness associated with these streets and use an identity framework as a tool for bringing back a sense of place to these streets thereby bringing about a local identity for these streets.

The literature review on different theories help us form an identity framework which we can use to bring back a sense of place and identity to these informal streets which have lost their identity. The theoretical framework provides us with some of the key concepts which we will be able to use to analyze and interpret data from the context.

Analysis is made of the assets of these informal paths in order to understand value creation. Through this an important question is answered

which relates to what aspects to keep, what aspects to improve on and what aspects need to be removed.

With these answered we can move on to the next stage of redefining these pathways as the social infrastructure of the city. The design helps us answer some of the important questions pertaining to how the framework is used to redefine the place making of these informal pathways.

Identity and place making characteristics are used as a tool for guiding regeneration strategies because the strategies which exist in the Shillong City development plan has mostly been based on the physical aspects of the place and not so much the psychological aspects which brings about a sense of belonging and ownership to the place.

Sub Research Questions

SRQ 1

What is the relation between the morphological structure of the city and the functional structure of the city which helps create public spaces?

This research question is answered through studying the form of the streets and their response to the topography. A morphology study of the area through mapping of the street patterns and topographical maps will help give some insights on the nature of these pathways. A study of the kinds of activities which occur on the different paths also help determine what character these streets have and whether or not they create a positive image of the place.

SQR3

What are the aspects of the informal paths that contribute to sense of place of public spaces and what aspects should be preserved?

This aspect can be answered by literature review of the key concepts of place making and place identity and indicators of place identity to understand what aspects make a positive urban identity. The analysis into the area made by considering the steps made in the previous research question which deals with an understanding of the impact of morphology on public spaces will help determine what are the aspects which contribute to the place making of the informal pathways.

SRQ 3

What are the qualities (mental, physical, social)

present at the neighbourhood urban tissue level which add to the identity of hilltowns?

The theories based on place making and place identity will determine a framework for analysis and design based on the form, activity and meaning. Using this framework we will be able to uncover the most important values present in each of the aspects of identity. The values associated with the physical form are determined through a historical study of what elements of the street form were valued in the past and also by mapping out the multiple layers of the landform with the movement networks and built form to determine how form is determined by topography, the mental aspects of imageability and meaning are determined through mental maps made by the respondents and the social activities which add to the place making and making of urban identity will be determined through making detailed observations of the intricate activities occurring on these pathways.

SRQ 4

What is a desirable future for these informal paths?

The design solution provides us with the answers to these questions by looking at how the old and new conditions differ. The new conditions adds identity to these areas and add a direction for a desirable future of the city. The inquiry into the current trends seen in the city through the city development plans and other government initiatives help formulate the future trends to which the city is heading towards.

4.3 Tools and Techniques

4.3.1 Literature Review

Literature research is done at the start in order to come to a problem definition. Based on the literature review analysis has been done on the research site in order to understand the current trends of urbanization of hilltowns and the existing policy frameworks which exists for the development in the hilltowns of India.

As has been defined in the problem statement, the lack of coherence in the new urban forms with the morphological structure of the city has created a slow degradation in the quality of public space networks. This led to literature study on how identity can be read and understood in the built environment. A framework for the study has been proposed. The framework for analysis provides a very firm base on which to tackle the problem of loss of identity because these three factors are the major aspects on which identity of a place is usually shaped by.

This framework of Form, Activity and Meaning gives us a guide on how to look at identity by analysing the different aspects (Illustration 45).

This aspect is obtained through the literature research discussed in chapter 3 and forms the first part to our understanding of identity (described in Illustration 45).

A way to operationalize these is brought about by using information obtained from site observations and interviews in order to uncover elements which are very specific to the case of hilltowns. These are represented in the next diagram illustration 42. This can be used as a model for enhancing the transferability of the interventions to different locations as well.

4.3.2 Design

The design in this case will be used as a tool for validating the findings on urban identity. It will be used to evaluate the design principles formulated. Design is used as a platform for further research on what other elements could improve social quality, enhance spatial experience and improve the technical capabilities of these informal paths as the infrastructural elements of the city.

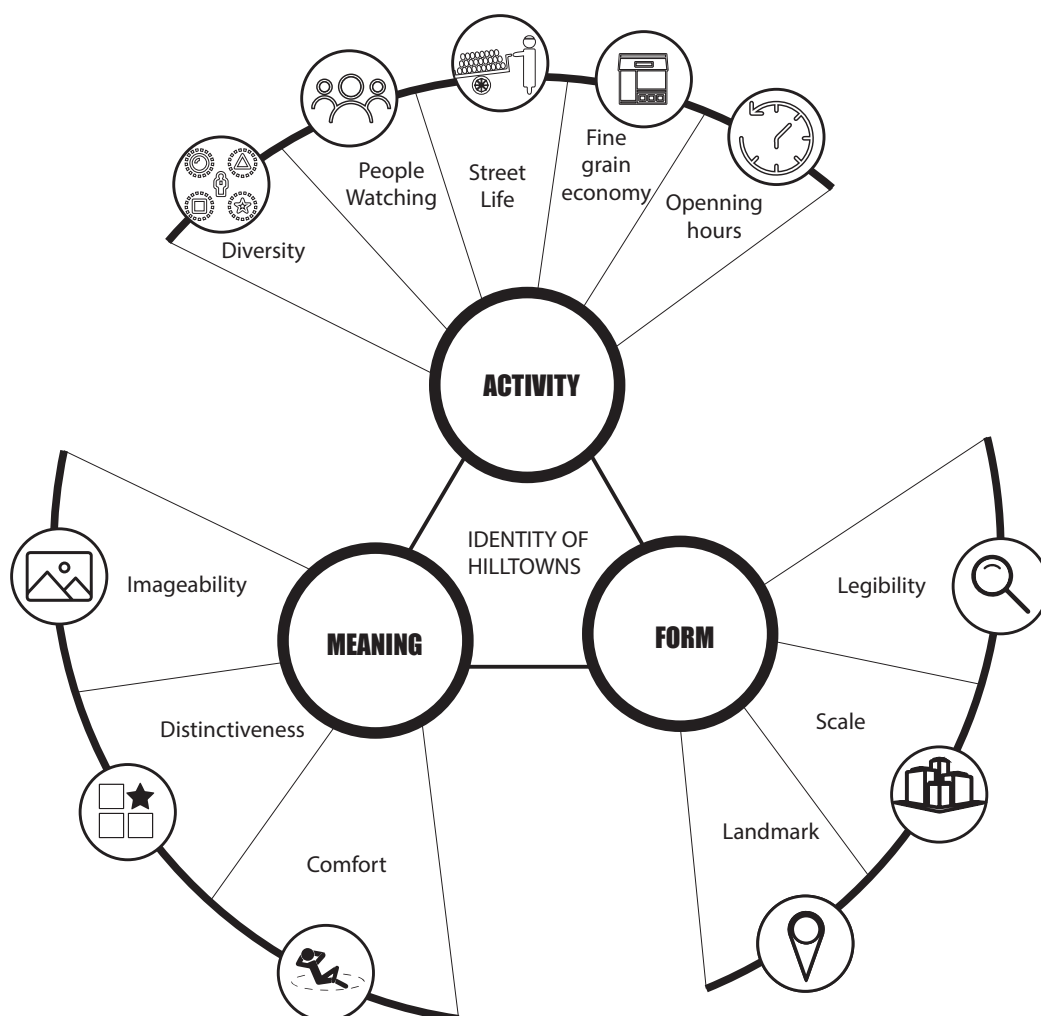


Illustration 45 : Framework for analysis and design

Source : Author

From this section on understanding of indicators of place identity we draw a few conclusions. The first relates to place attachment. Through the concept of place attachment we can understand what aspects add value. The understanding of place dependency we can derive the functional attributes which enhance dependency. The last

Further drawing from what we have learned in the theoretical chapter we want to operationalize these attributes hence in the new model what is represented by the outer ring in the figure above (Illustration 46) relates to what characteristics can be included in each of the aspects

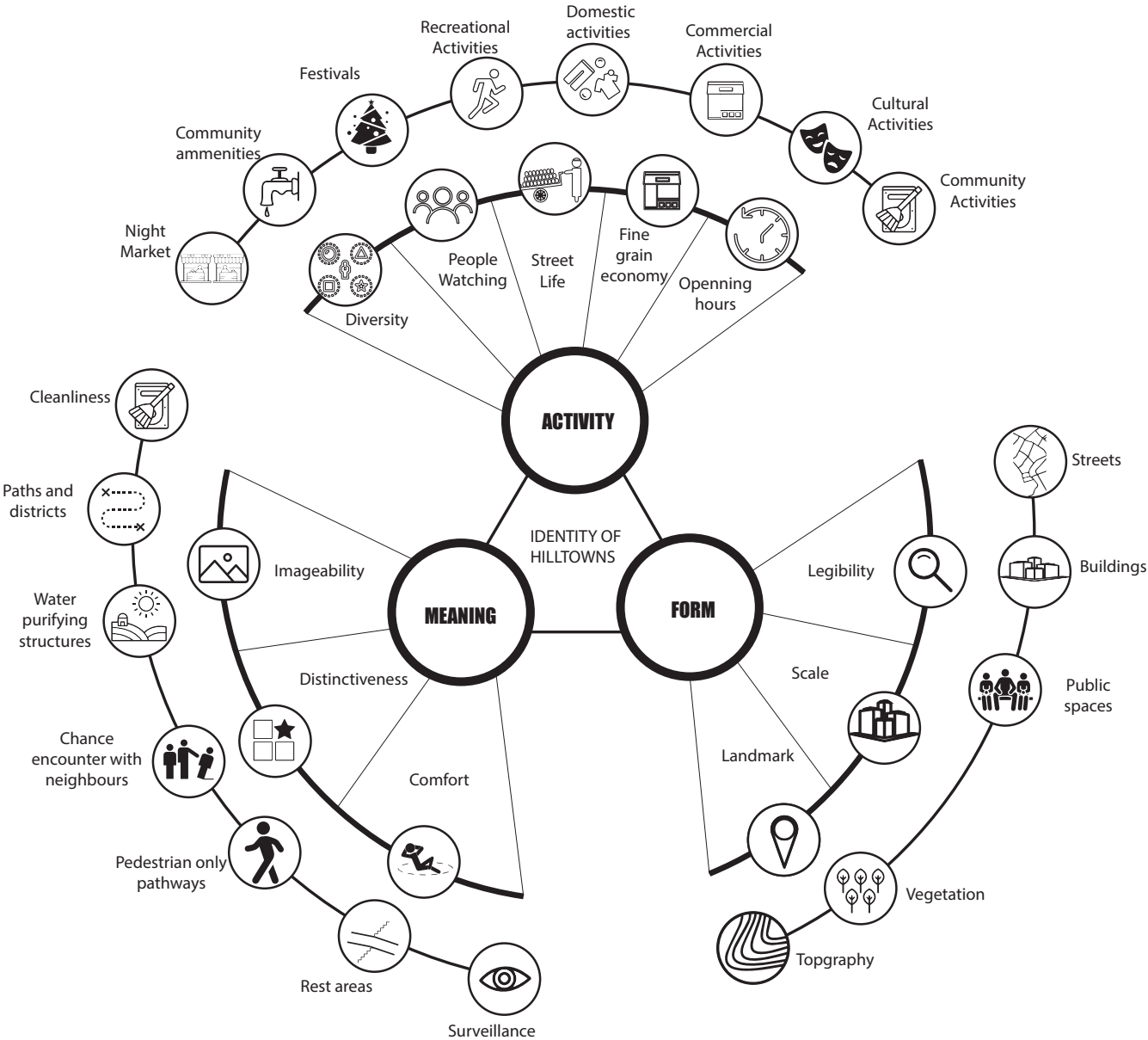


Illustration 46 : New model framework for the design interventions
Source : Author

concept of sense of place helps us identify what physical forms influence people's perceptions of place and enables them to ascribe meaning to a place.

The theories which help us define urban identity are represented in the inner circle and these define the more general layout of identity. The outer circle shown in the figure below (Illustration 46) describes what different attributes are contained within the form activity and meaning.

about identity with relation to the context of hill-towns. It can be seen that the domestic activities and community activities such as cleaning drives are very distinct to the context of Shillong. The topography and vegetation as well are very strong influential characteristics which relate to the form aspect of the identity. The meaning is conceived through there being surveillance on these streets as well as rest areas which makes these places more pleasurable to walk on.

4.4 Data collection and interpretation

4.4.1 Observations

Conducting fieldwork is considered one of the primary sources for extracting information about the area. Since this was an inductive research and not much information is present with regards to the study area. Hence, most of the attributes mapped out were based on extraction on information present on the site itself made by the researcher. This kind of research, in which the experience of the user and the person in such urban public places is very important, therefore a field visit and personal interpretation and experience in the place is absolutely essential.

Since this framework is built around these three pillars of form, activity and meaning the method of making observations on the site is essential to understand aspects of some of the activities which happen at the site. Daily routine and daily activities such as people watching and people interaction at certain specific points can only be analyzed through experiencing first hand data from the site. This will however also be supplemented by information gathered from mapping of various activities taking place and drawing conclusions of the interrelations between form and activity.

4.4.2 Mapping

The mapping of the functional characteristics and the physical characteristics is done to better understand another aspect of this framework which helps define identity. The different activities are mapped out in terms of their functional attributes as well as social attributes. This helps us

establish what types of activities contribute to a stronger character of street life.

The mapping of the physical aspects of the urban environment both man-made and natural helps establish the relationship between the morphology of the urban environment and its close link to the physical setting. Mapping of the morphological features as well as the form-based elements of the identity helps to draw conclusions on the way the response to the landscape features plays a role in shaping the identity of hill-towns.

The last aspect of mental image or meaning will be mapped through a method discussed later in this section(mapping through interviews).

4.4.3 Interviews

This tool mostly will be used for understanding some of the intangible aspects of identity which is mostly related to the psychological associations people have with the place. As already discussed in the theoretical framework in chapter 3 psychological components are very important to peoples associations with places and contribute greatly to sense of place and place making principles in cities. In the theoretical chapter we discuss that the meaning of the place which contributes to identity is based on the psychological aspects as well as the physical setting. The psychological aspects of what meanings a place imbue on people are understood through understandings of place attachment, place dependency and sense of place.

Interviews will be conducted on static and mobile users. Static users represent such people as local residents, shopkeepers, school children and office workers who are dependent on the place on a daily basis. Mobile users represent visitors, shoppers and non-residents. Specific questions with regards to meanings associated with the built environment will help get more accurate conclusions of the area. Questions pertaining to place attachment, place dependency and sense of place gives us some ideas about how the current condition of these informal paths exist.

4.4.4 Mapping through interviews

Another key aspect of this research which is crucial is the field interviews which is conducted on the residents. The mental images of places are mapped out in order to get the users interpretation of the places of study. The field interviews were made possible by conducting interviews with only a small group of people. There were 12 people who were chosen for the interviews owing to the time constraints of collecting information from all people who were free to take part in the interviews. This represents only a very miniscule section of the population and can not possibly account for the opinions of the entire population. However, the results showcase quite similar opinions and can be duplicated for an even larger section of the community.

This is done by asking people prepare the mental maps of the place based on Lynch's theory about image of the city. The different elements of

the city(paths, edges, nodes, districts and landmarks) was explained to the respondents. Based on their understanding of the locality of Laban these maps were prepared in order to get an understanding of the most imageable elements of the locality on to a drawing.

There were also two aspects to this method. One in which the respondents were asked to just draw out what they saw and what they envisioned as their mental map of Laban. These maps were drawn out by the respondents on pieces of paper. These maps were then collected and made into a consolidated mental map through the sketches. The second was based on interviewing the people and asking them to explain through verbal discussions some of the highlights and imageable elements of the locality as perceived by them. The answers were noted down and were then converted into maps.



Shillong city

This chapter describes the city of shillong, its history and evolution from a small hill station for the British to the administrative capital of the state of Meghalaya. It also describes the other characteristics of the city from demographics to the morphology.

5.1 Hilltown

This section delves deeper into the characteristics of the context study area to understand the location in terms of the theories on urban identity mentioned in the previous sections.

Shillong like many other hill stations was also set up as a summer retreat for the British in India. Shillong is located in the state of Meghalaya in the north eastern region of India (Illustration 47), in between the state of Assam to the north and Bangladesh to the south (Illustration 48). The British established Shillong as a hill station in 1864 which then consisted of a cluster of a few hamlets organized around a local weekly market which was called 'iewduh' which was meant to service the inhabitants living there at the time. It started with a few settlements in three locations, the Laban, Mawkhair and the Laitumkhrah area (Illustration 50). According to local sources these initial settlements were always clustered around market areas these were the places the people would have their weekly markets and people from far and wide would come and sell their produce. The market areas were very important places for the people of the region.

Shillong is located about 103 km to the south of Guwahati (Illustration 49) which is the closest large urban center in the north east region. It is located at an altitude of about 1500m to 1900m above mean sea level.

Shillong owes its importance to its administrative function. It is also an important educational center in North East India as a whole and is a place of attraction for tourism industry (Ryngnga, 2013).



Illustration 47 : India

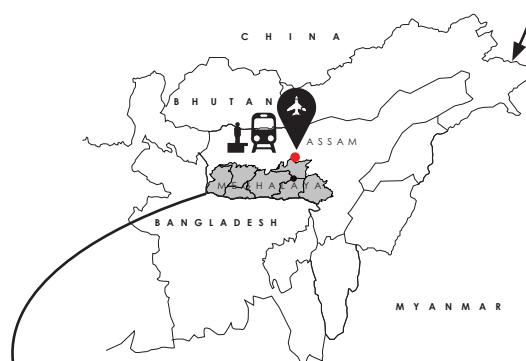


Illustration 48 : North East India

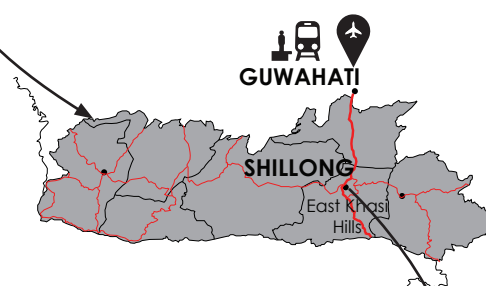


Illustration 49 : Meghalaya

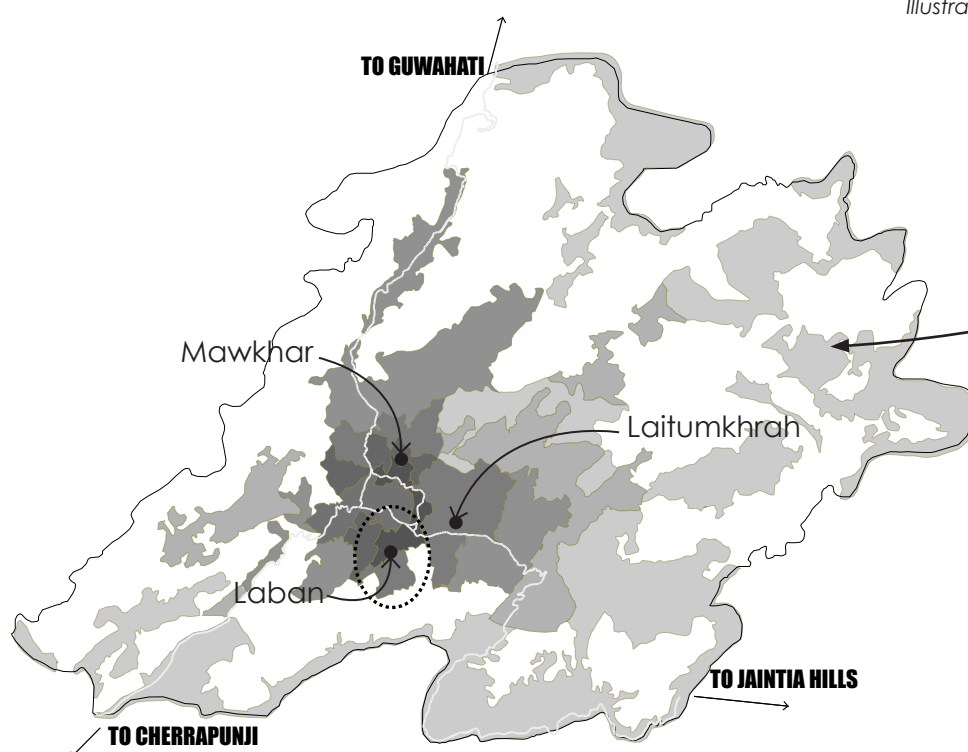


Illustration 50 : Location of Shillong in the context of India

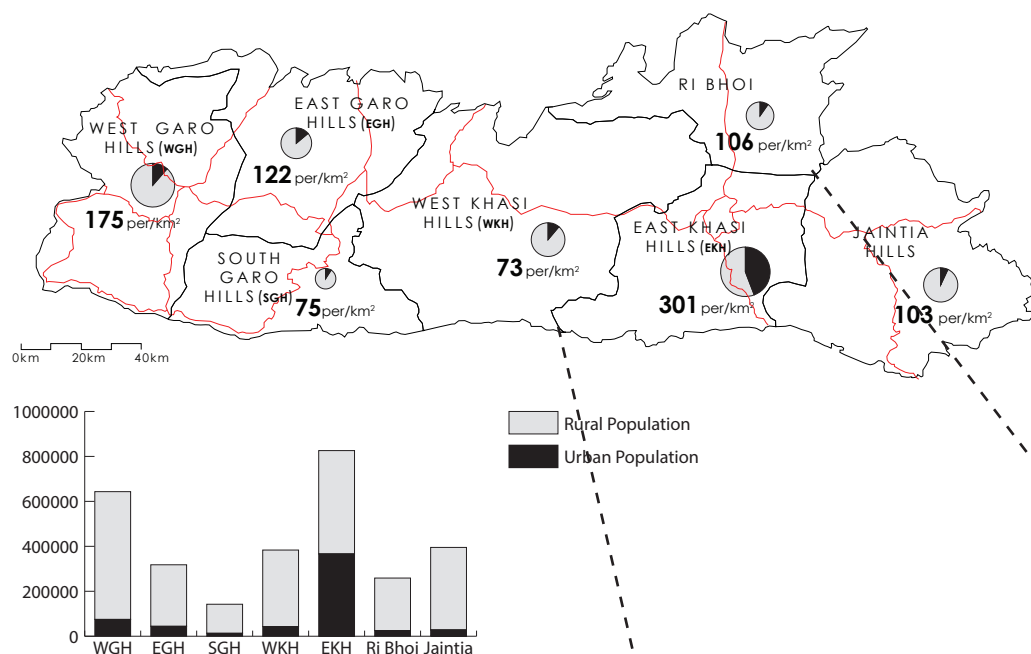


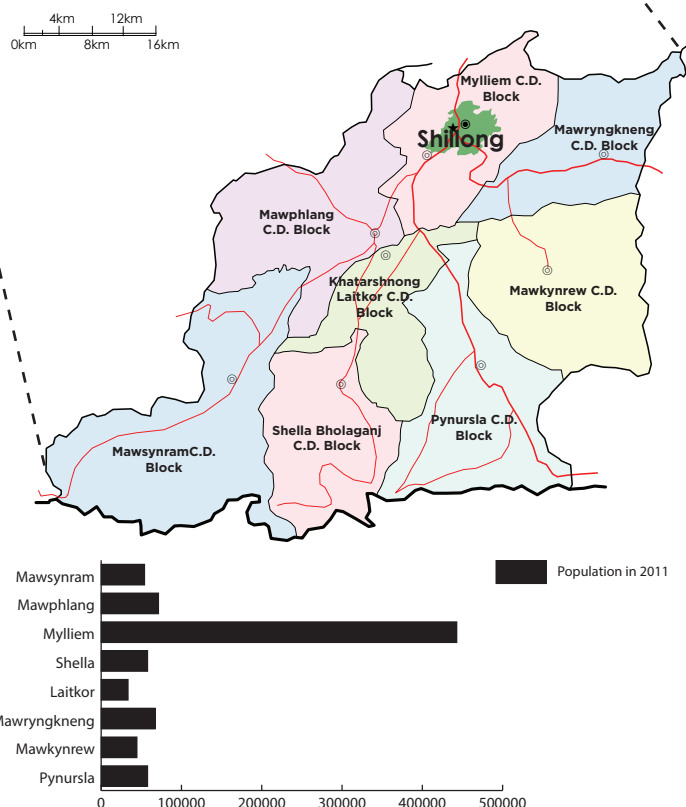
Illustration 51 : Rural to urban population in 1991, 2001 & 2011 of the different districts of Meghalaya; Population densities of each district also indicated

Source : Made by the author, Information retrieved from Statistical Handbook of Meghalaya 2017

Shillong hosts 60% of the urban population of the state of Meghalaya. It is the largest city in the state of Meghalaya with a population of 354759 as of the Census of 2011. The next big urban center has a population of only about 74858 (Tura as shown in Illustration 51) while other urban areas in the state are less than 30000 which further highlights the importance of Shillong as a major nodal urban centre. Shillong lies in the East Khasi Hills district of Meghalaya and has the majority of the population, amounting to 96% of the urban population of the East Khasi Hills district (Illustration 52) The district is further subdivided into blocks of which the Myllem block in which Shillong city lies has the largest population (Illustration 52).

Shillong being the only large economic centre in the state of Meghalaya has seen huge pressure on the urban infrastructures and urban services. The limitations on availability of developable land owing to constraints owing to the hilly terrain also poses another problem for urban development.

Population distribution of East Khasi Hills district 2011



96 % of the Urban Population of East Khasi Hills district lives in Shillong
60% of the Urban Population of Meghalaya Lives in Shillong

Illustration 52 : Population size in the East Khasi Hills district

Source : Made by the author, Information retrieved from Census Handbook of India for different districts and Statistical Handbook of Meghalaya 2017

5.2 Historical development of Shillong city

Pre Colonial

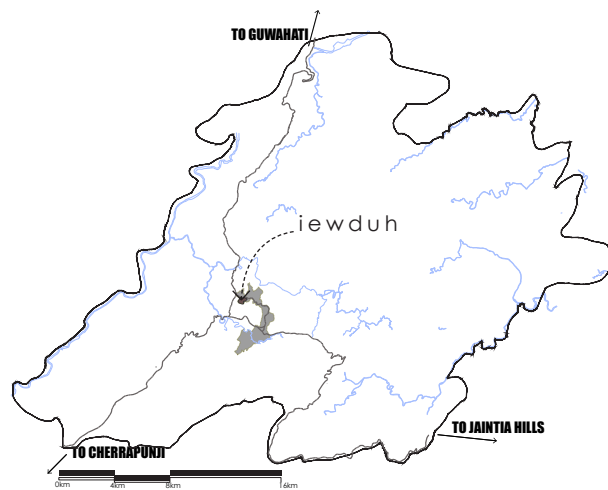


Illustration 53 : Shillong City in 1864

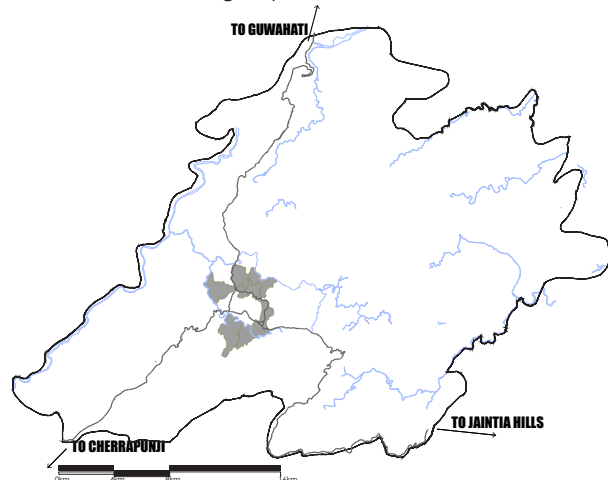


Illustration 54 : Shillong City in 1874

British Era

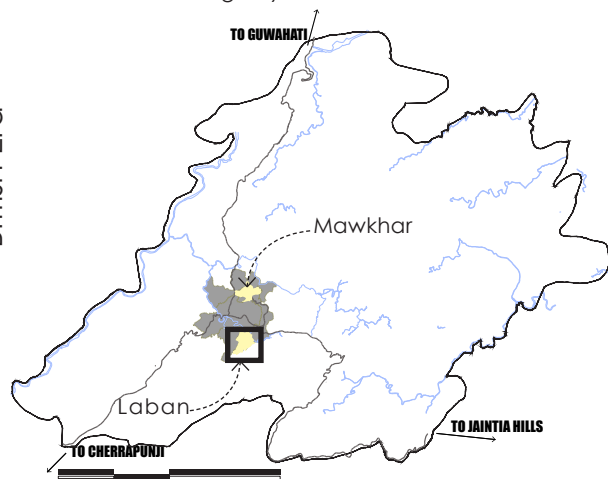


Illustration 55 : Shillong City in 1885

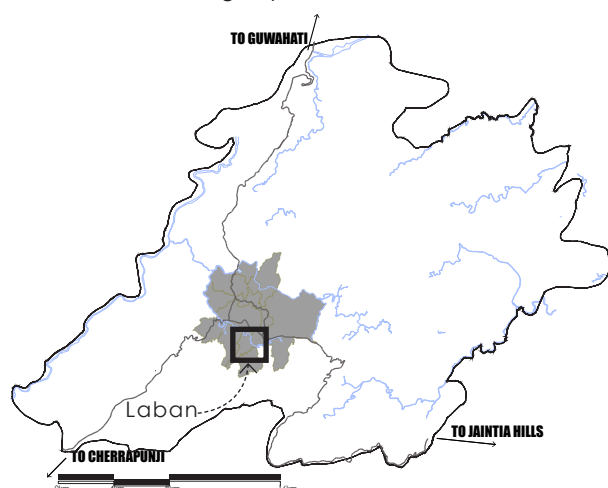


Illustration 56 : Shillong City in 1909

In order to further explain the identity of Shillong we have to take a closer look at the historical perspective and how it grew. We also do this by looking at one of the oldest neighbourhoods of the city which grew from a Khasi settlement to a multicultural and multi ethnic locality and the current situation it is in today.

Pre British Period(Before 1860)

During the pre-colonial era Shillong constituted of small hamlets under the jurisdiction of the Syiem of Myllem(Monarch or Small king). There was a small market called "Iewduh" (shown in Illustration 53) which was held once a week to serve the tiny population. The inhabitants of the area at this time were mostly the Khasi people who were the tribal people of the region.

British Period (1864- 1947)

Shillong was considered for a headquarters station, military cantonment and sanatorium for the British. The British purchased huge tracks of land from the Syiem of Myllem.

The area close to "Iewduh" was chosen because of its location close to the weekly market as well as easy access and approach road. The main road connected the plains of Bangladesh in the south to the Assam valley towards the north (refer Illustration 48) in which the British were involved with the tea plantations.

In 1878 the areas of two suburban villages of Mawkhar and Laban were included with the British area in order to fulfill the condition required to establish Shillong as a station (shown in Illustration 55).

In 1909 the Bengal Municipality act of 1884 was extended to Shillong and the municipal boundaries were extended to include three more wards i)Mawprem ii)Laitumkhrah and iii)Malki and the British wards were split up into i) European wards ii) Jailroad iii) Police Bazaar. By 1929 there were 11 wards out of which 3 were in the so called British area and 8 in the other areas. Thus the urban area of Shillong started to expand (Illustration 56).

Post-Independence period (1947-1972)

The importance of the city as an administrative center with many central and state government offices immigration of people both for government and non-governmental jobs started. People came across the international border of Bangladesh which resulted in vacant lands within the municipality being occupied and saw residential colonies beginning to grow outside of the municipal boundaries (municipal boundaries depicted in Illustration 57).

The Municipality did not provide much scope for residential colonies and the city began to grow beyond the municipal boundaries to include the census towns of Nongthymmai and Mawlai as well (Illustration 58).

In 1972, Meghalaya gained statehood and Shillong became the Capital city of this newly formed state. This gave further boost to the growth of the city with the forming of regional institutions of the central government such as the North Eastern Hill University which also attracted people from the neighbouring states of the North East region.

Present day

Today the city continues to grow towards the urban fringes with the setting up of many more new educational institutions. The strong incentives for tourism in the state has increased the importance of the state as a nodal center for tourism in the north east. However, the expansion into the fringe areas of Shillong has also caused urban densification in older parts of the city (Illustration 59) such as the locality of Laban which suffers due to inadequate infrastructure and poor connectivity to the rest of the city. On top of the encroachment of new urban developments into residential neighbourhoods there has also been a loss of importance of some of the significant landmarks of the locality. The importance of the movement networks have also declined owing to the encroachment of multi-storeyed buildings which ignore the interface between the building and the street level.

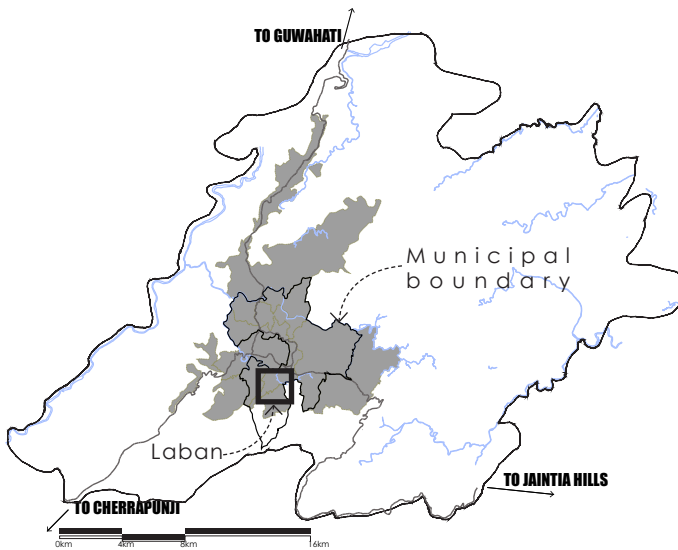


Illustration 57 : Shillong City in 1930

Post Independence

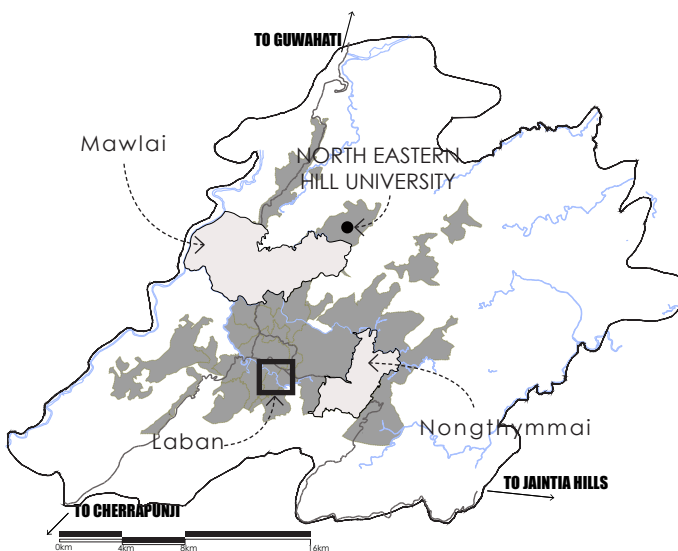


Illustration 58 : Shillong City in 1962

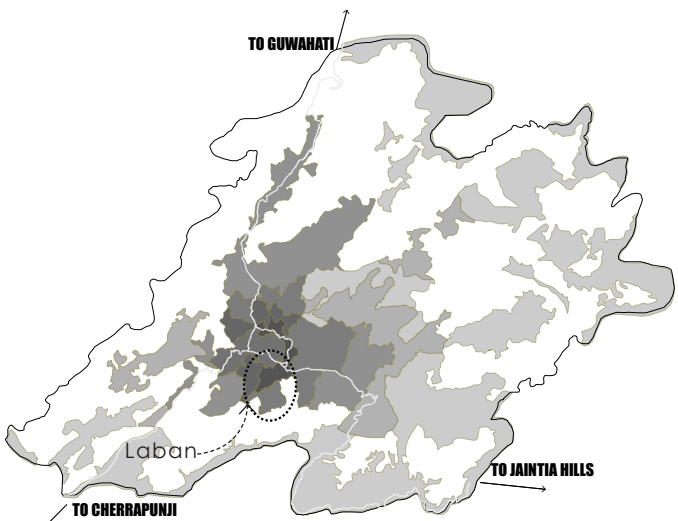


Illustration 59 : Shillong City from 1991 to present

Given below (Illustration 60) is a timeline of the growth of the city through time and the major influencing factors which contributed to the transformations in the city.

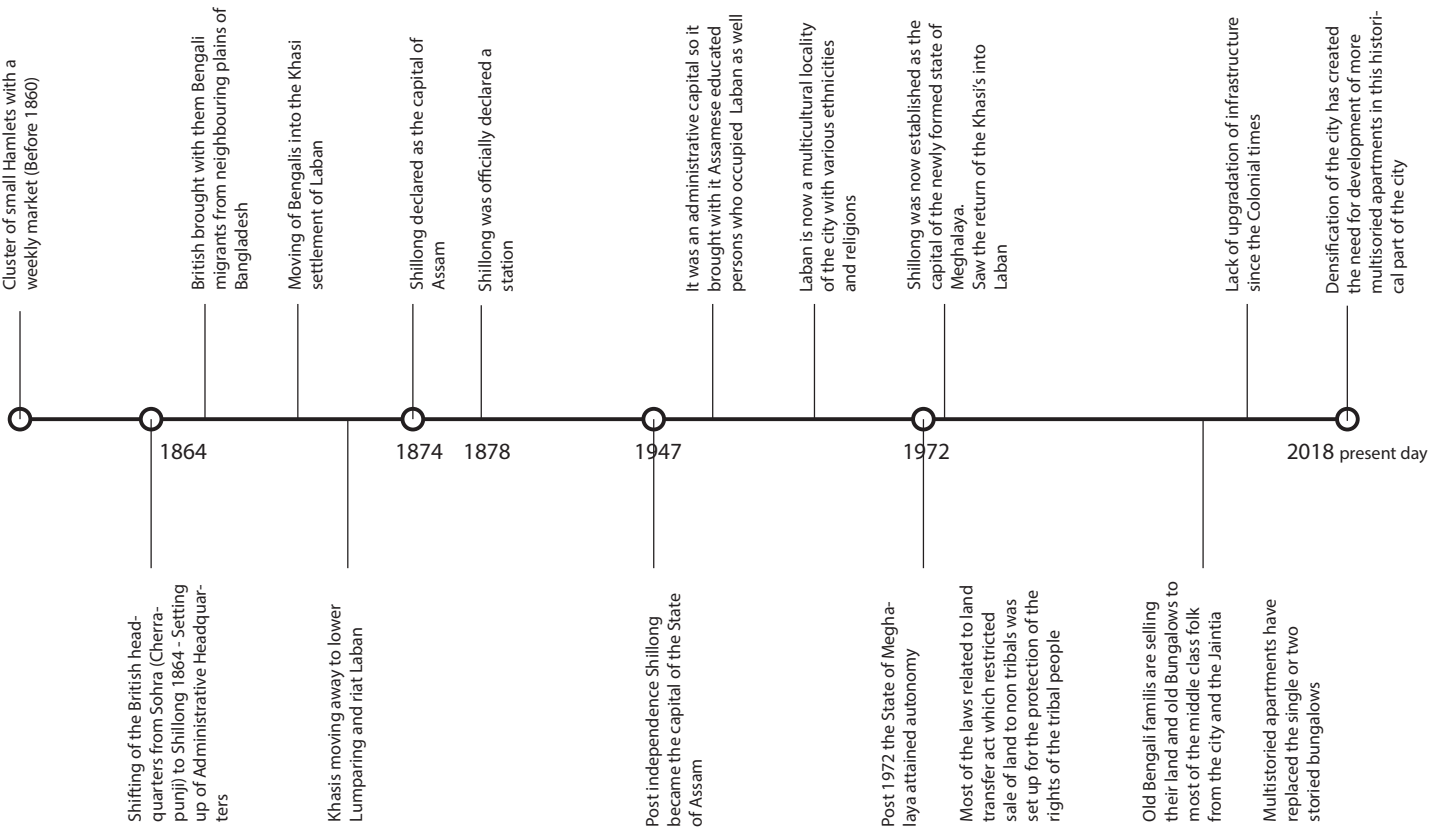


Illustration 60 : Timeline of the growth of the city
Source : Made by the author

5.3 Characterisation of the city

The land form has predominantly shaped the morphology of the city, therefore it is necessary to understand how the topography plays a role at the city scale level, at the urban neighbourhood level and finally at the locality level.

5.3.1 City Level

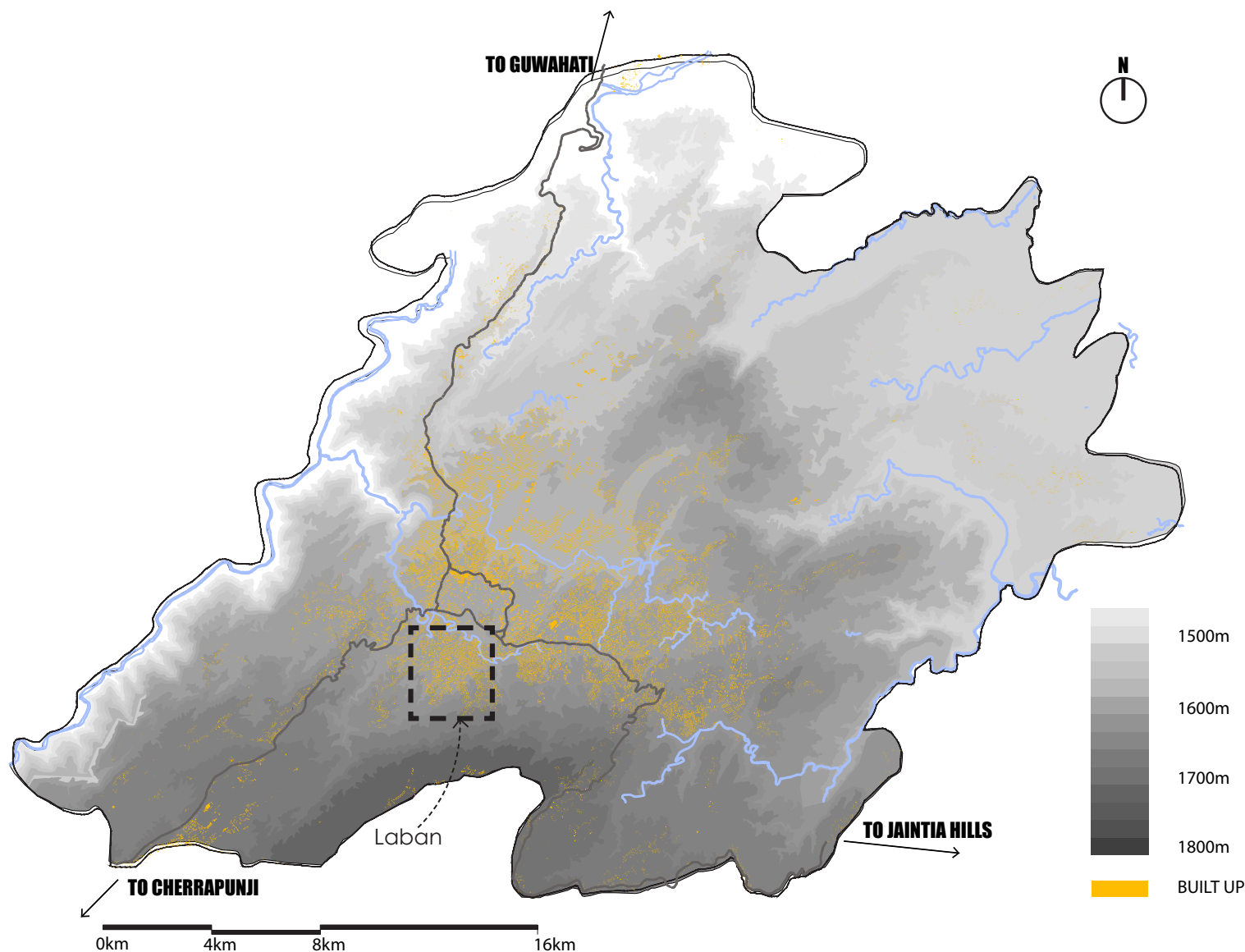


Illustration 61 : Contours and Built fabric of the city

Source : Made by the author, Information retrieved from Department of Urban Affairs, Government of Meghalaya

The form of the city is geomorphic. The topography of the landscape creates fine grained urban forms which are influenced by the topography of the landscape. The hilly terrain poses challenges for urban development. As seen from the image above (Illustration 61) the southern part of the city has a greater altitude and there is a higher angle of slope in these regions. The locality of Laban located in this region is also vulnerable in terms of

lack of adequate space for new developments and have just resulted in hap hazard growth.

The slope morphology of the context also provides certain kind of limitations to the urban development with only certain areas suitable for development.

The land form map for Shillong (Illustration 62)

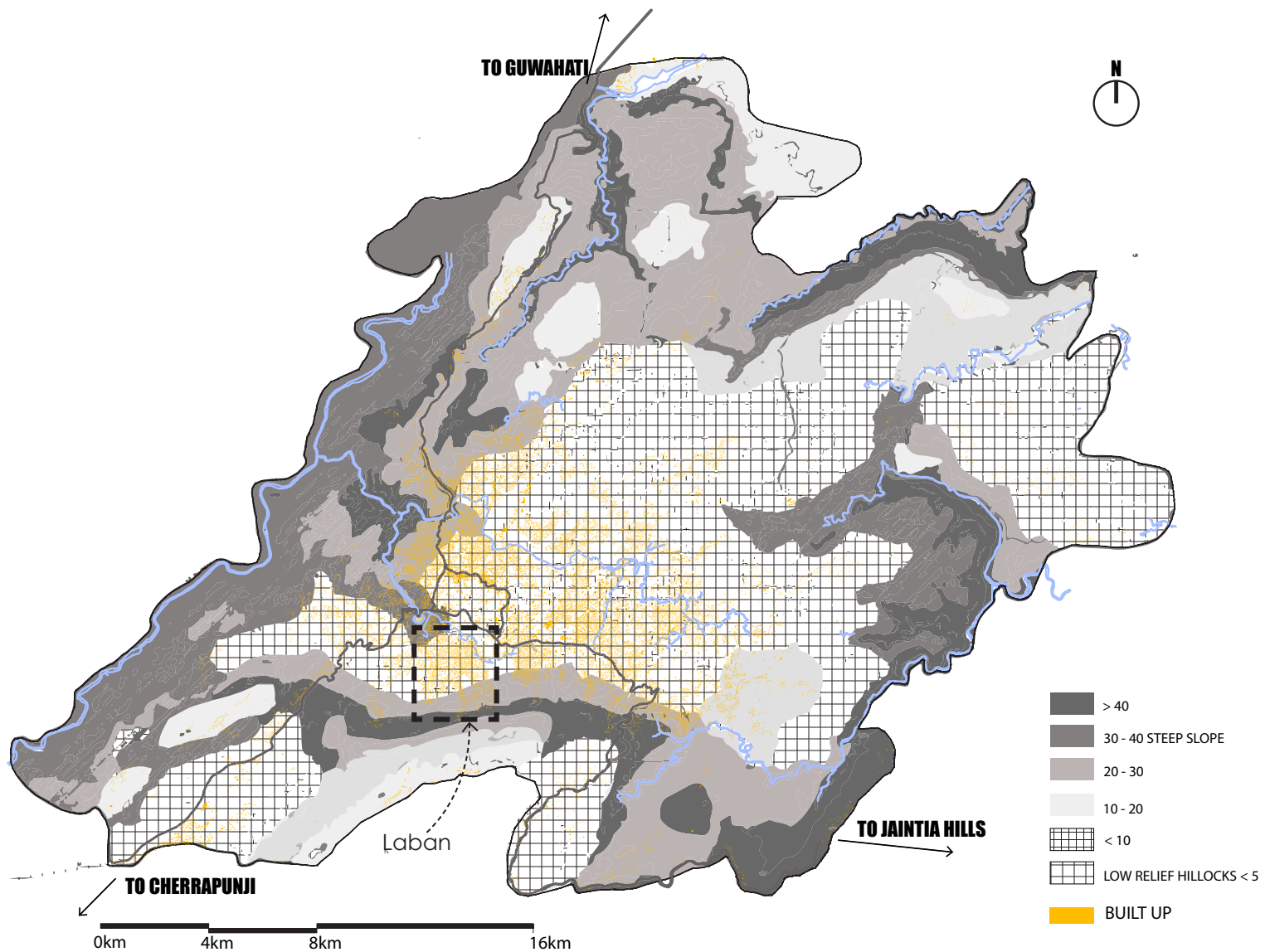


Illustration 62 : Land form map for Shillong (GSPA - Greater Shillong Planning Area)

Source : Made by the author, Information retrieved from UP Department SPA. (2008) Strategic Development Plan for Hill Capital; Case Study - Shillong

shows the different regions of the city where most of the slope is too great which then hampers or limits further future development into these areas. As can be seen from the diagram (Illustration 62) most parts of the built up is still on slopes of less than 10 degree angles. But in some areas as in the case of Laban locality where we have our study area some of the buildings developed occur in areas which have almost 30-40 degree angle of the

slopes. This could become potentially dangerous if this rampant growth is not moderated.

The development of the city has been mainly on the gentler slopes, but it has also followed the main arterial roads which cross right through the heart of the city.

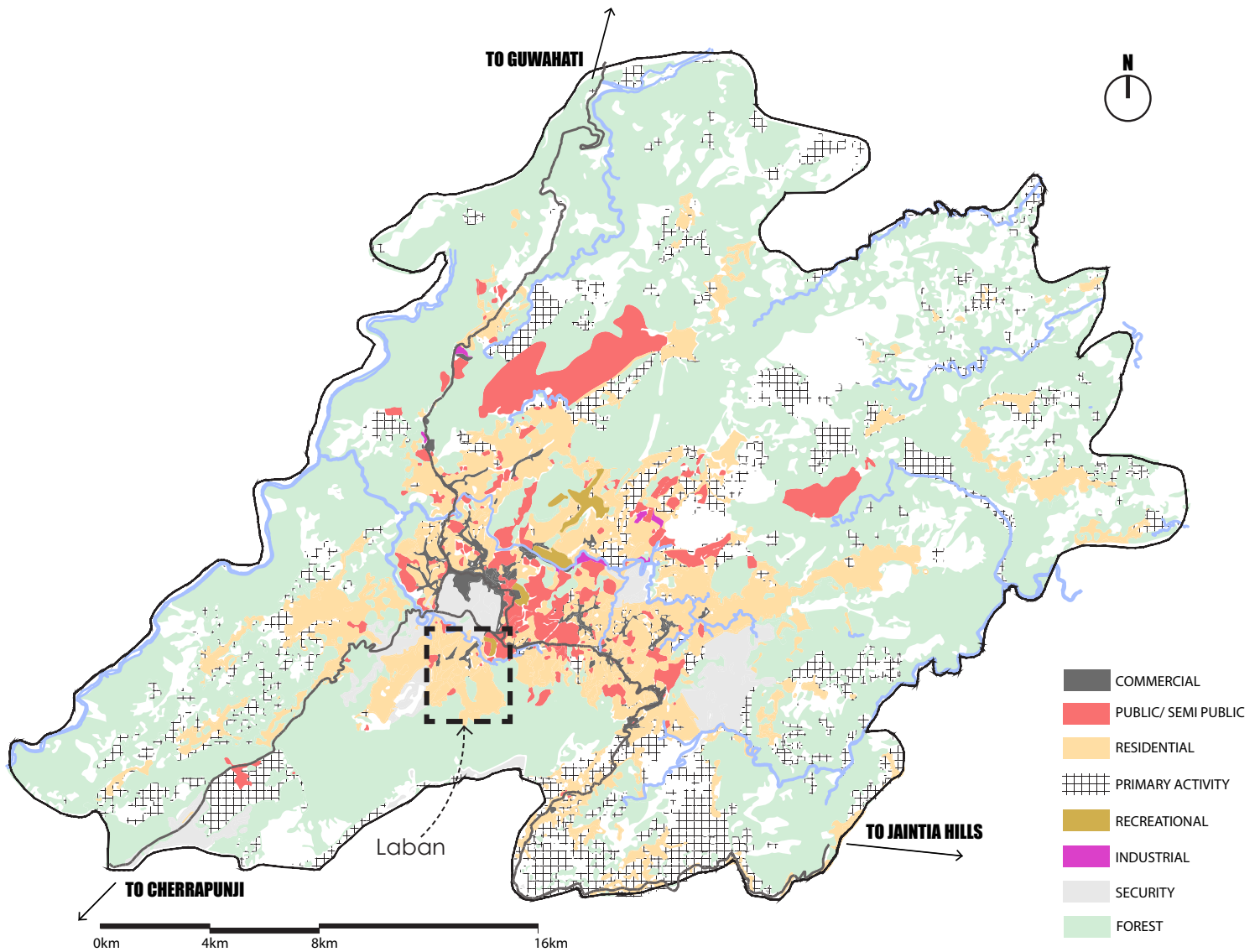


Illustration 63 : Land Use map for Shillong (GSPA- Greater Shillong Planning area)

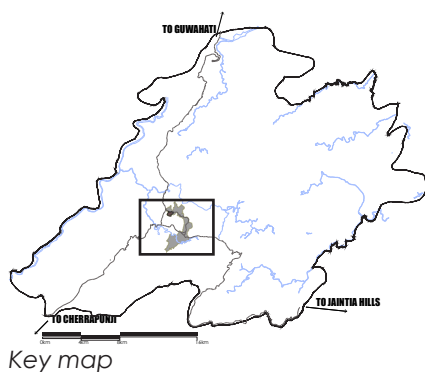
Source : Made by the author, Information retrieved from Department of Urban Affairs, Government of Meghalaya

The land use map (Illustration 63) shows the concentration of the most important functional elements closer to the city center. Hence, there is the pressure to develop and further densify the older and more vulnerable parts of the old city like Laban locality. This shows a very dire need to have a more planned development for the city in order to steer urban development towards a more resilient urban form which preserves some of the local characteristics which are present in the tissue structure of the city. These are the building blocks of the urban character of Shillong which needs to be preserved in order to retain the character of the neighbourhood.

The kind of pressures which are seen in Shillong are the concentration of activities in the historical city area developed during the colonial period. These areas have seen little change in terms of functional characteristics since the establishment of the hilltowns which developed as commercial and administrative centers.

5.3.2 Urban Neighbourhood level

Like most of the hill stations in India, the establishment of the hill station required service men for the maintenance of the British administrative buildings. Since there were no educated locals to work in these administrative buildings, education having only been set up in the 1840's, the British brought in existing staff members from Dhaka and the surrounding areas of Sylhet. Thus, there arose a need for these staff members and their families to settle. This was at a time when the first war of independence for India, which was in 1857, was still fresh on the minds of the British. Hence, the British were searching for an area which would not pose any threat should there be any revolt or mutiny. The locality of Laban fits the requirements. It was an area closest to the new administrative buildings.



When Shillong was established as already pointed out earlier in this chapter in section 5.2, there were a cluster of a few farming villages with a small local market in the area. One of the localities was Laban which was close to the administrative hub of the British.

The weekly market shown here on the bottom image (Illustration 64) served the local population and some other areas around it. This was the place where the local produce from the various settlements could be bought and sold off.



Illustration 64 : Local market during the pre colonial and colonial days

Source: <https://mrbipec.wordpress.com/2010/10/24/shillong-then-and-now/>

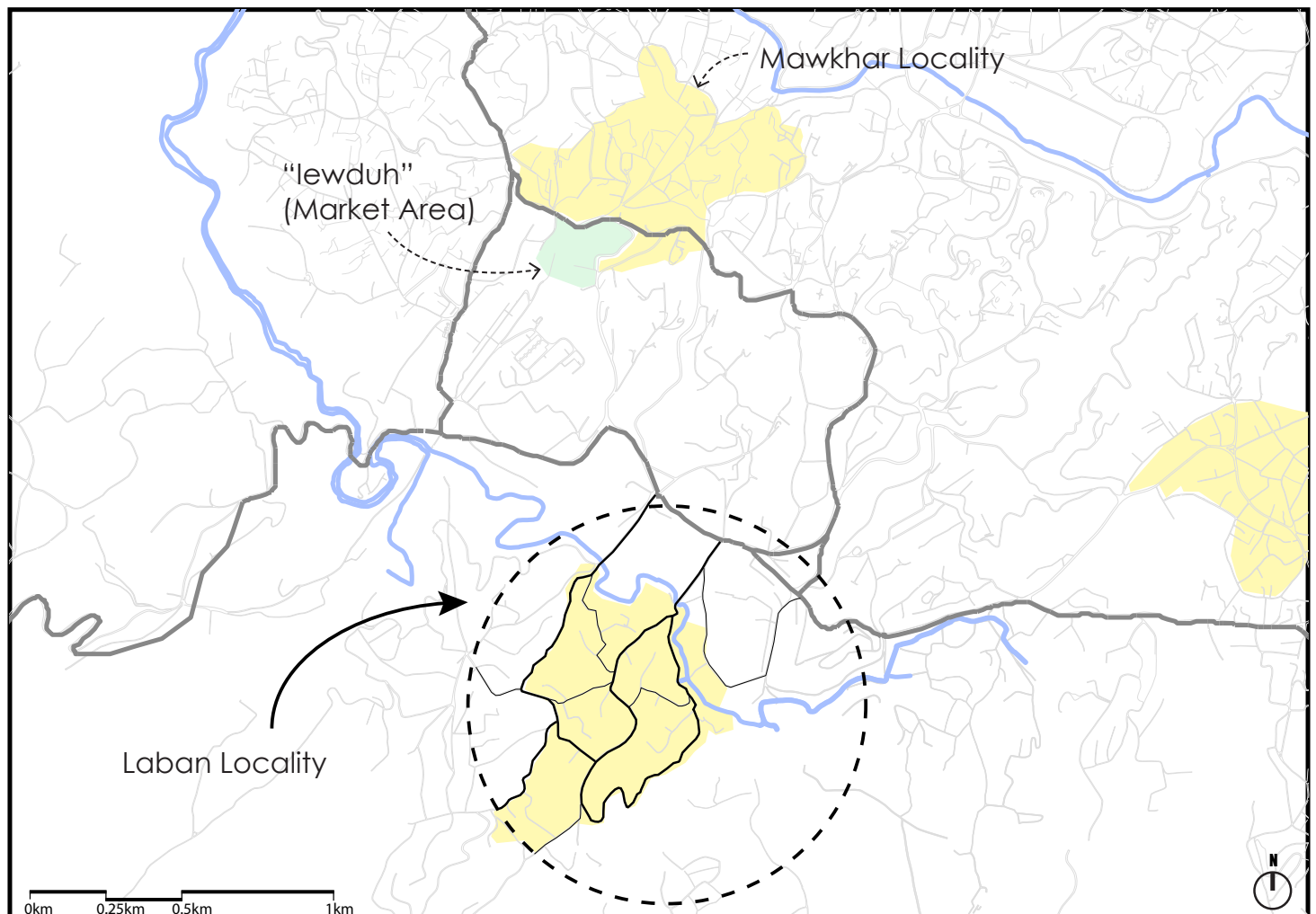


Illustration 65 : Local weekly market area where the first settlers used to sell their produce at

Source : Retrieved from UP Department SPA. (2008). Strategic Development Plan for Hill Capital ; Case Study - Shillong.

The British set up their administrative center close to the weekly market and along the main road of the settlement at that time. This main road connected the settlement to the Assam valley in the north as mentioned earlier in section 5.1 of this chapter. Hence, the location was also ideal. The cantonment area was also set up close to the heart of the city. Most of the original administrative building are still in these same areas to this day, like the gover-

nors house and the assembly building which all lie at the heart of the city.

The locality chosen for locating the residents who would serve under the British administration was Laban since it was ideally located.



Illustration 66 : Assembly building close to the heart of town

Source: <https://www.cuttingthechai.com/2012/06/5837/vintage-photographs-shillong-1948-and-val-labhbhai-patel-calling-people-assam-lazy/>

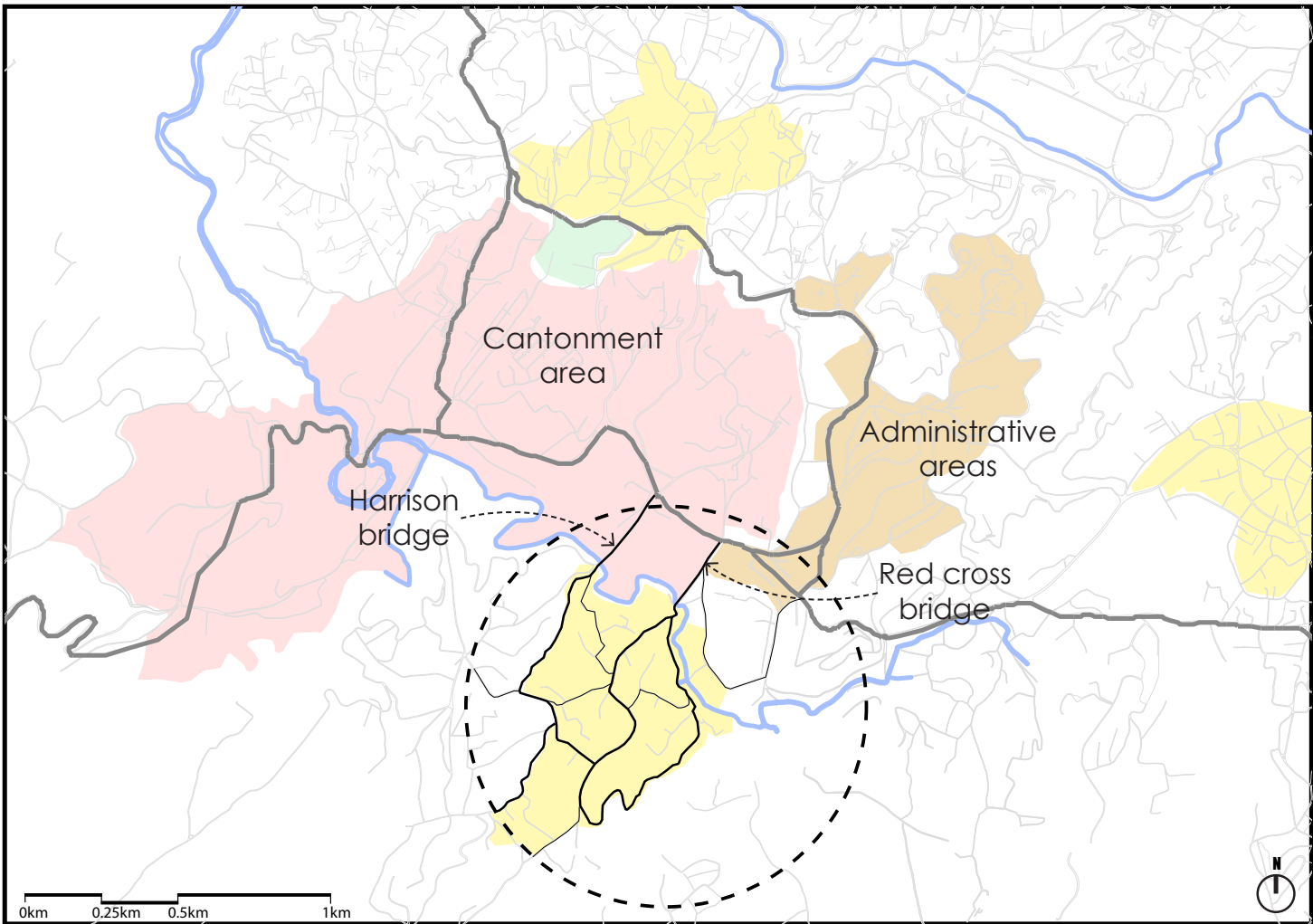


Illustration 67 : Locations of the administrative areas and the cantonment areas

Source : Retrieved from UP Department SPA. (2008). Strategic Development Plan for Hill Capital ; Case Study - Shillong.

To the south, south-west and south east it is surrounded by dense forests and steep hills and the west (Illustration 69 shows the land under forested area) and north-west it has military installations (cantonment area shown in Illustration 67) and the rest is government land and establishments and police presence. In other words it is a cul-de-sac and even today it can be choked from two points. It has only two access points, the Red Cross bridge and Harrison bridge (Illustration 67).

ed some of the British settlers of the Scottish Highlands and the referred to it as "The Scotland of the East". They started to fashion the settlement into their liking by setting up of a Cricket ground (Garrison Grounds) on the edge of the Laban locality (Illustration 70) as well as a race course in the more flatter part of the city where they would conduct polo games. They beautified the city center with the wards lake and a botanical garden close to the present day governor's house.

The rolling hills and the pine trees of Shillong remind-



Illustration 68 : Wards Lake on the way to the commercial area of the town

Source: <https://mrbiped.wordpress.com/2010/10/24/shillong-then-and-now/>



Illustration 69 : Garrison ground which was used as a cricket ground. View of Laban in the background

Source: <https://mrbiped.wordpress.com/2010/10/24/shillong-then-and-now/>

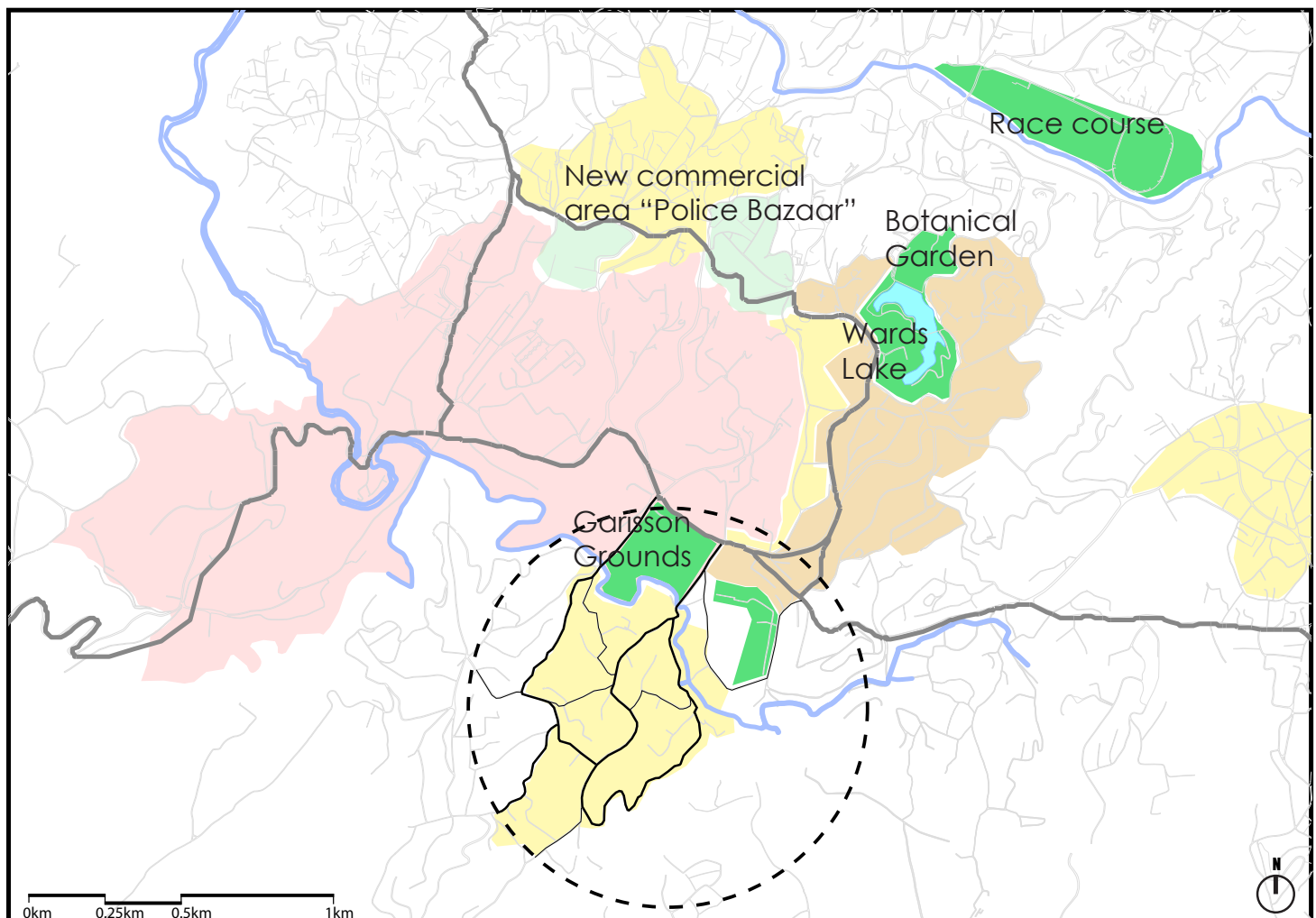


Illustration 70 : Locations of recreational areas

Source : Retrieved from UP Department SPA. (2008). Strategic Development Plan for Hill Capital ; Case Study - Shillong.

It was around this time that many educational institutions were set up (Illustration 71) by missionaries who came from various regions such as Ireland and Wales which resulted in few more settlements coming up close to these areas. Thus the inner heart of the city became more populated with some of the most important functions of the city. This fueled more people to move into prominent localities such as Laban to be closer to the heart of the city where all commercial and administrative activities were located. It is for this reason that to this day most of the people who come from rural areas to Shillong city do not usually say they are going to Shillong but they say that

they are going to “Laban” because of the prominence of Laban since establishment of the city.

The proximity of Laban to such important centers in the city attracts a lot of urban development to this part of the city. Most of the urban growth till the time of independence was still within the municipal boundaries and the major areas of urban growth were mostly in Laban and Mawkhar locality.

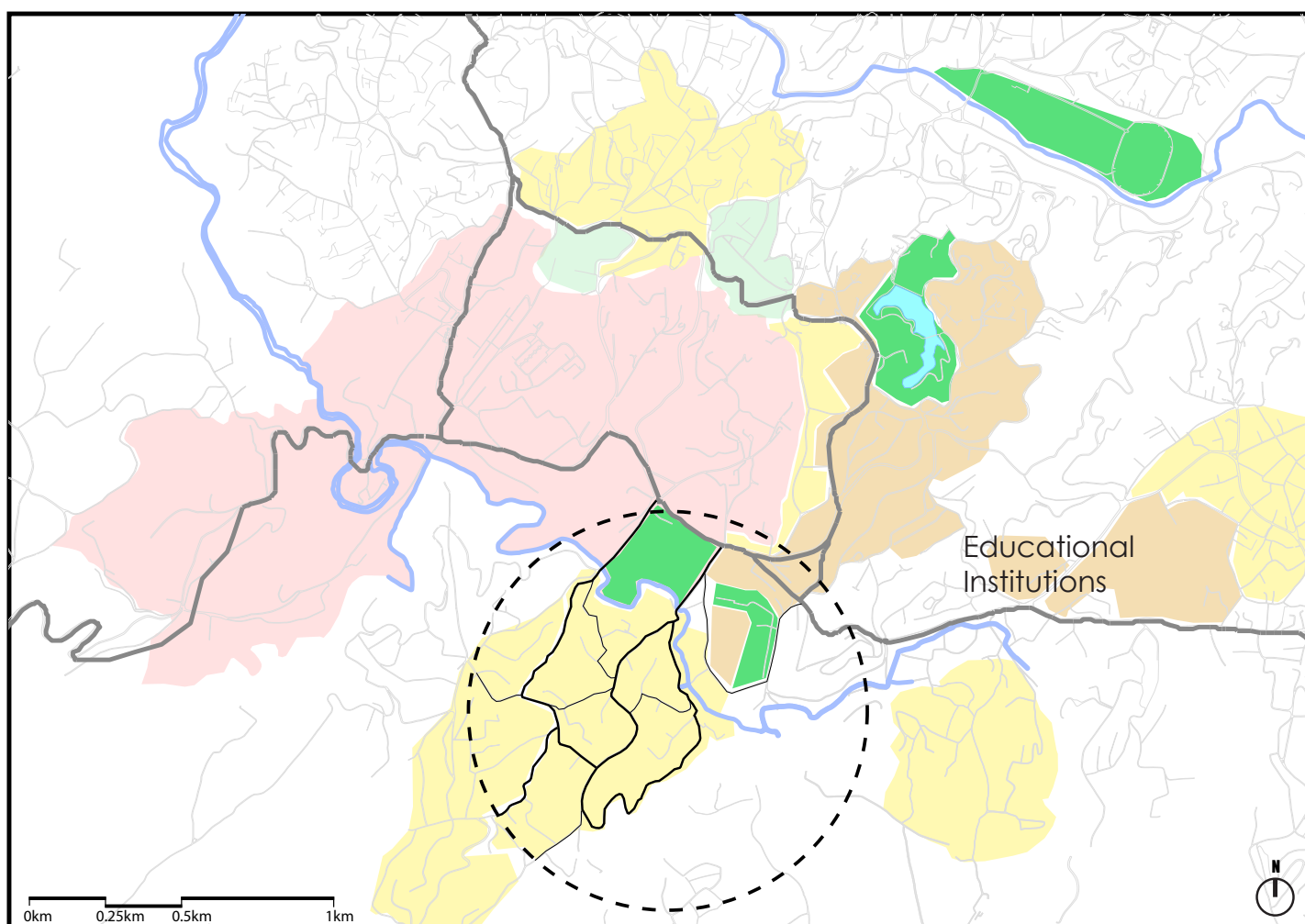


Illustration 71 : New educational areas coming up within Shillong

Source : Retrieved from UP Department SPA. (2008). Strategic Development Plan for Hill Capital ; Case Study - Shillong.

5.4 Laban Locality

Shillong is a hill station, and as has been stated in chapter 2 was among the many areas chosen by the British for a base for operations. They located their administrative headquarters in the heart of the city and chose Laban as the residential area. They chose the locality close to the weekly market "lewduh" (Illustration 65) as the hub of administrative buildings because of its proximity to the main road which connected to other parts of the province and the locality of Laban was chosen for residential purpose of the elite working classes who served in the administrative services.

Due to lack of educated locals from the region the British brought in educated service men from the neighbouring region of Dhaka in order to man their administrative buildings. These service men were Bengali speaking people and were a different ethnic group of people from the Khasi's who were residing in the area.

The locality of Laban was chosen as the prime area to locate and house these new service men. Some of the locals who were already living in the area sold of their lands to these migrants

and moved away from lower lying areas of the settlement on to the further fringes of the locality. The fear of the outsiders drove some of the locals away, writes River Wahlang in an article about the degrading quality of one of the oldest town of Shillong in a local newspaper, The Shillong Times (Wahlang, The Shillong Times 2013). The locality was home to even more new migrants, this time from the state of Assam who came to stay in the locality after India gained its independence and Shillong was declared the capital of a larger region called Assam. Not all locals who stayed in the Laban locality sold off their land and after the original fear of outsiders the locals came and settled back in Laban locality. Thus, Laban became the first multicultural locality in Shillong. (Wahlang, The Shillong Times 2013)

This locality was then an area where quaint bungalows were established which were responded well to the local context and topography of the region. The multi ethnic and multicultural nature of the neighbourhood also added to the a more diversified neighbourhood with different religious institutions and different cultural practices.

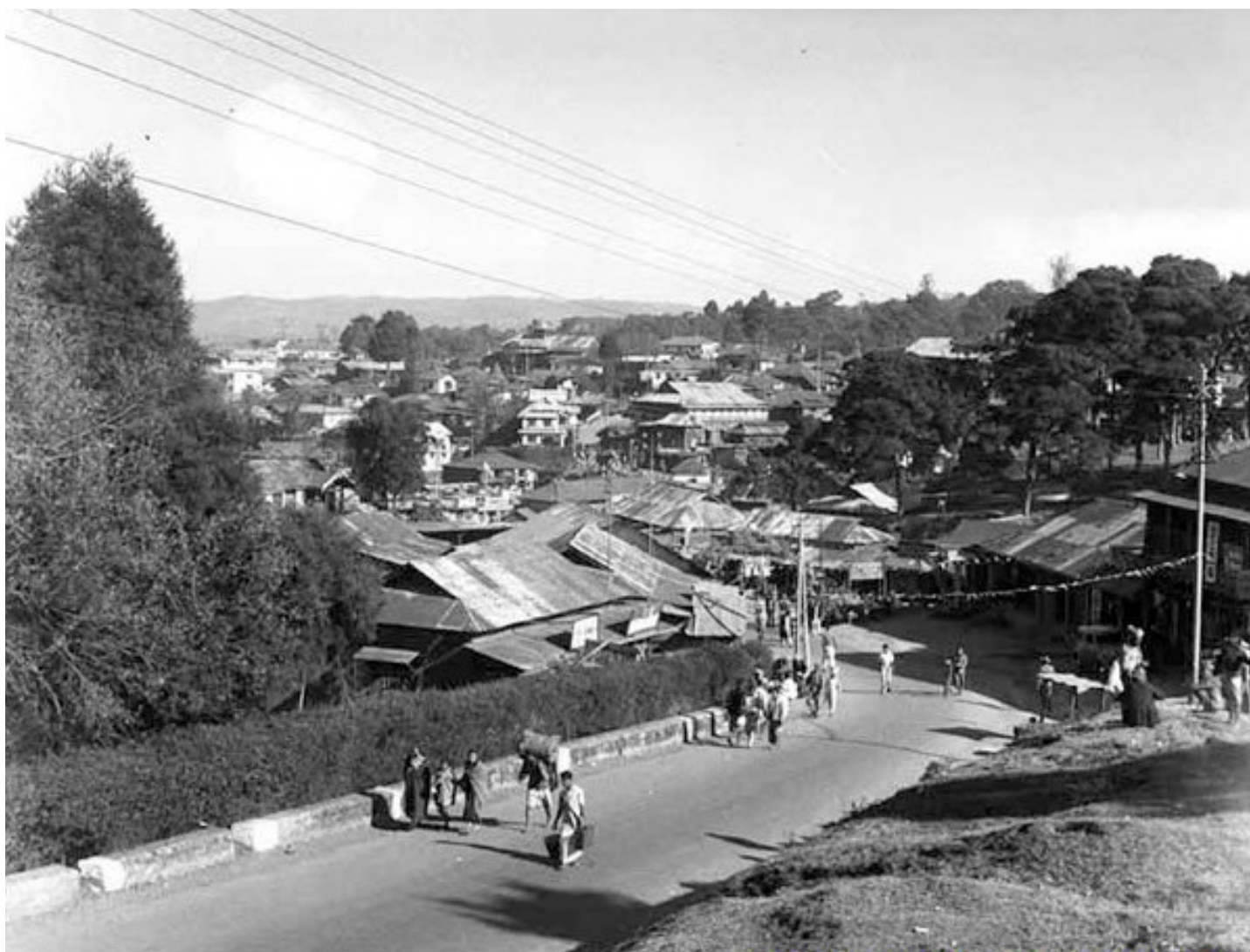
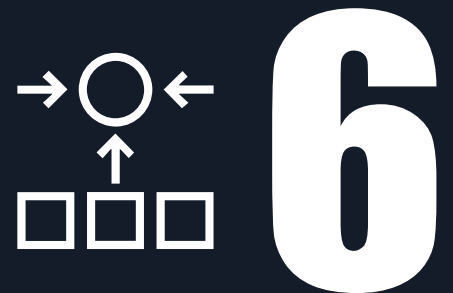


Illustration 72 : Laban locality in the 1940's

Source : <https://www.cuttingthechai.com/2012/06/5837/vintage-photographs-shillong-1948-and-vallabh-bhai-patel-calling-people-as-sam-lazy/>



Illustration 73 : Google image of Laban area
Source : Google maps



Analysis through the framework

This section describes the line of inquiry into the study area using the framework of form, activity and meaning in order to analyse and interpret the conditions present in the study area.

Introduction

This chapter highlights the ways in which we will look at this analysis of the locality of Laban in terms of the framework we have proposed earlier in the methodology chapter. This consists of the form, activity and the meaning.

In the first component, we will look at the *meaning* aspect of the built environment. This has been determined by applying Lynch's theory to determine what some of the most imageable elements of the neighbourhood are. Through this analysis we will be able to determine how people value certain elements in the built environment. Here we use three components which adds to the meaning of places meaning which are imageability, distinctiveness and comfort.

The second component will look at how *form* contributes to the identity of the public spaces. As already explained in the theoretical framework in chapter 3 the contribution of physical environment to the sense of place is very crucial. Sense of place is not just a social construct but is a result of the users perceptions and interpretations of the physical environment around them in order to create their own image of sense of place through the various element of the physical environment. Here we use three components to highlight the physical environment which are legibility, scale and landmarks which helps us to navigate what aspects need to be thought of while considering the physical environment.

The third component is the *activities* which essentially turns a space into a place. Jane Jacobs describes active streets as the essential components in a city which help it to function and it is

those intricacies and activities which make an active street life the identity of a place. These are mainly captured through the aspects of

So using these three components we would like to base the analysis and further contribute to the design of urban public spaces of hilltowns.

5.1 Meaning

Kevin Lynch (The mental image of the city - imageability

The image of Laban as perceived by the residents. This method was incorporated in order to develop some ideas of what the mental images the residents have of the locality of Laban. This method introduces the concept of paths, edges, nodes, landmarks and districts of a city as explained by Lynch. These were the aspects asked to be illustrated in the mental maps made by the respondents.

These map shows the relationship the residents have with their most important imageable places in the neighbourhood. This method describes the residents response to the physical and mental features the residents have of their neighbourhood. In this way it helps us establish what elements of the built environment contribute to the tangible aspects and what images conjures up the intangible aspect of the neighbourhood.

As was already pointed out this location is one of the oldest neighbourhood of the city and it has a mix of people living in this area since the establishment of the city. It has a mix of tribals and non tribals living in the area. The tribals in this area are the Khasi people, who are the indigeneous people of the state of Meghalaya. The other people residing in this area are the Assamese people and the Bengali people.

This research is primarily rooted in a field based study hence it proved very helpful to use the methods described by Kevin Lynch in order to get the public's opinion on form and legibility of the urban environment. Field interviews were conducted on some of the residents from the locality as well as people who were just visitors to

the locality.

There were two parts to the interview. The first part was verbal discussions and was mainly based on talking to the people and asking them general questions of what they thought about the neighbourhood and letting the conversation flow more organically into the positive and negative qualities of the neighbourhood. The verbal description of some of these areas gives a more in depth meaning into what users mental picture of the place is. The second part consisted of asking them to draw up mental maps of the locality based on what they saw and how they used the neighbourhood. This second part was meant to see not only the product of respondents immediate sensation to the place but also memories of past experience which is used to interpret information and to guide action (Lynch, 1960). This second part gives us more clues into the physical setting and what aspects of it are more legible and imageable to the residents.

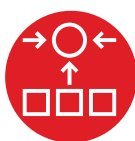
This is analysed through three aspects which are comfort, imageability and distinctiveness.



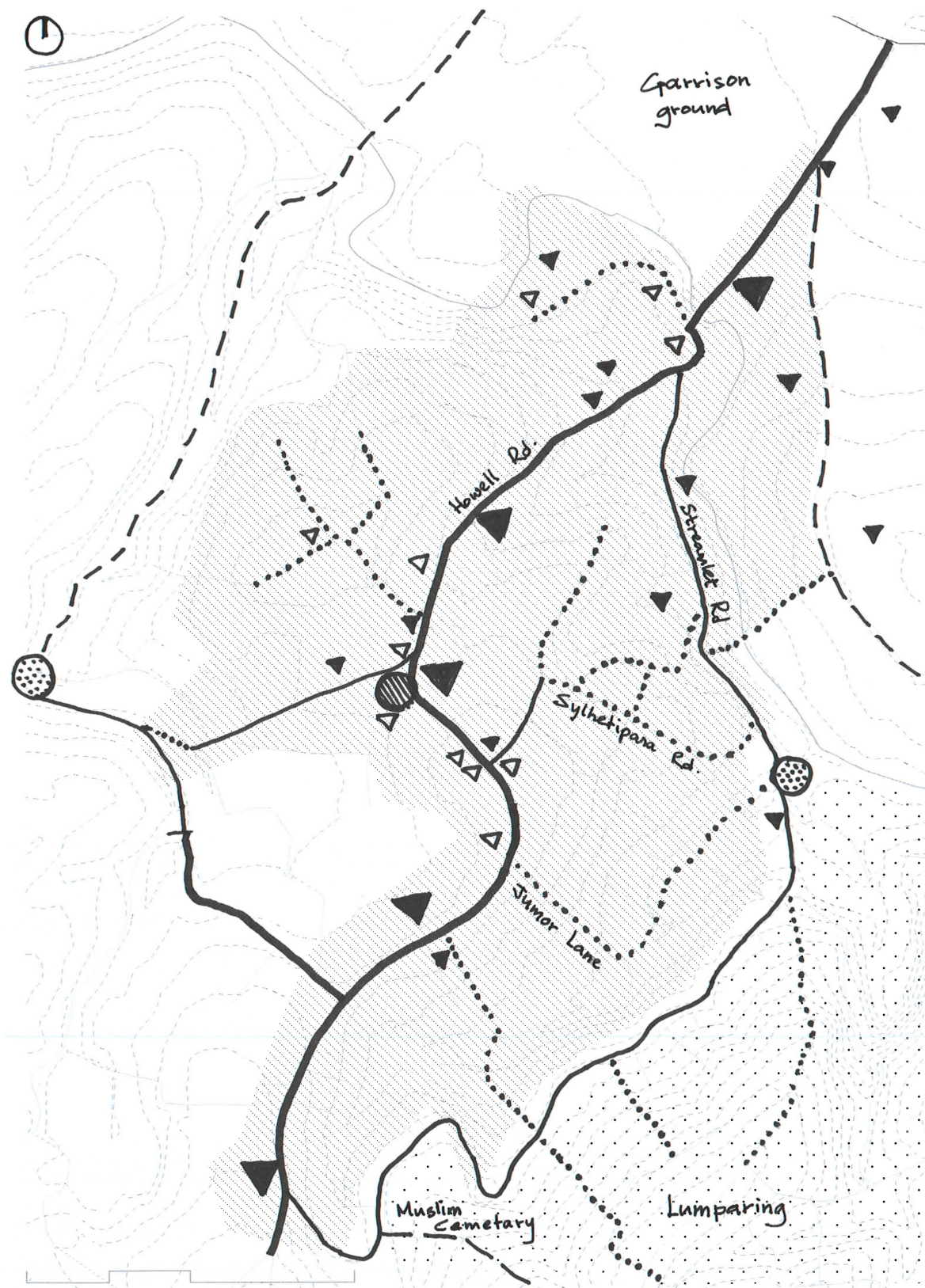
Comfort



Imageability



Distinctiveness



	Paths	Edges	Nodes	Districts	Landmarks
75-100- %					
50-75- %					
25-50- %					
0-25- %					

Illustration 74 : Mental map of Laban through sketch maps
Source : Author, drawn from mental maps

5.1.1 Sketch maps

The respondents were asked to draw up maps of the neighbourhood based on what areas they used and what places they found most imageable and legible to them. The consolidated map of all the mental maps prepared by the respondents is highlighted in the illustration shown (Illustration 74).

Places of interest were highlighted such as local tea shops where residents were found of to go to and meet neighbours to discuss about news and sports or politics. "Appayani" is one such shop which most residents are fond of (shown in Illustration 77). Most of the respondents explain that this is a tea stall where some of the best tea snacks are available. Some local landmarks were also marked by the residents as these served as a reference point to orient themselves. It is seen in the maps that the most represented landmarks lie along the main vehicular street. The image on the left (Illustration 74) shows the thicker line of the main movement spine which represents the fact that it is more recognizable and more imageable to people. It is also clear that most of the landmarks highlighted lie along this main line. These landmarks are mostly religious institutions, health institutions and government buildings. These elements of the city are important to the residents but only has a meaning only as far as orientation and location goes for the local residents and visitors since most of the respondents did not have any further description of the landmarks beyond just their names.

The pathways were one of the very first things most of the residents drew when asked to go ahead with this exercise. The majority of the respondents related to the imageability of laban mostly through the pathways with only a few places of interest being highlighted along the paths. In the sketch maps it was found that more residents drew the smaller pedestrian streets which connected to their homes. These were the routes the residents would usually take on their way home from work, hence they serve a very important purpose to the residents. *Purpose* is what gives value to an object and in this case this is one of the important values of the streets.

The nodes which were most highlighted in the sketch maps was the area known as "İew dak" (shown in Illustration 75) which translated from the local Khasi language means "market next to post office". This is because in the past Shillong's first post office was located in this area. There was a night market also located in this area in the past. Today this market is shifted to the municipal market further back and has now been replaced by

a parking lot. When asked what were the characteristics of this place in the past, some of the respondents mentioned that this was a place that had a local water tap present at this location. This would be the location where most of the residents would go and collect their water from during the early morning hours. Hence, this place had meaning not only for the consumers who would buy vegetables and produce from the night market, but it also had meaning to the residents of the area. In this case the purpose of usage of this area during different times of the day served a very important meaning which contributed to its value and hence its imageability. The districts in this case were only expressed in terms of the different localities that are present in the vicinity. For example Laban locality could be highlighted as one district with its commercial activities happening there and Lumparing is a different district with its steep slopes and more residential areas.

What can be concluded from this map (Illustration 74) are the level of familiarity people of the neighbourhood have with the different movement networks. The more legible movement networks are along the main vehicular streets which is highlighted as the thicker line in the image (Illustration 74). This is owing to the fact that many of the important landmarks are along these routes and have diversity in activities along them as mentioned earlier, the educational institutions as well as religious institutions along with a market area. The dotted lines denoted in the figure are mostly the informal pathways which are utilised by the pedestrians. This is due to the fact that their use is primarily meant as a thoroughfare to reach to the main streets. In the past some of these streets would be dotted with local taps and water points where residents could go collect water from them. However the discontinuation of supply of water to most of these taps have resulted in their redundancy as a social space. Hence, these smaller pathways are no longer of primary importance to the life of the neighbourhood anymore and have become just the leftover space. They are merely a movement and access corridor to connect different places.

The landmarks were one of the stronger elements which also contributed to the residents understanding of sense of orientation. These landmarks included everything from small tea shops and food joints to the more prominent market areas and religious buildings. This suggest that people have their own personal value in important places and landmarks but in most cases their meaning is linked to the purpose these places have for the residents which gives them their value.



This used to be the location of the night market. It also had a local water tap which used to be present here where residents would come collect water from. Today it has been discontinued and the night market has also been shifted.



This was the old Assam club which was established since 1896 and is a community centre meant to hold the locality events and meetings. Today it serves many purposes from renting out its space to other institutions like the church opposite to it, to hosting events of the locality of Laban.



St. John's church is also a very important node but it is mostly remembered because a taxi stand is located here and it also lies at an intersection which bifurcates to go to other areas of Laban or to take the one way street and return back to the stramlet road and the red cross bridge through which one accesses the locality



Illustration 75 : Mental map of Laban through sketch maps along with images from different locations

Source : Author, drawn from mental maps



The Red Cross area is an important landmark mainly because of the informal activities which occur along this stretch of the street. The Red Cross itself though is an important public building which adds to the distinctness of this place.



The church is a reference point and a landmark mainly because it is a religious institution which connects many different groups of people together, but also because it has a physical presence to it. Its location next to the other facilities like the school and the market area is also another factor contributing to its imageability.



This pedestrian street was once the property of the Muslim Cemetary but since it was an easy thoroughfare to reach the main road it has been donated to the community as a public pathway.

5.2.2 Verbal Discussions

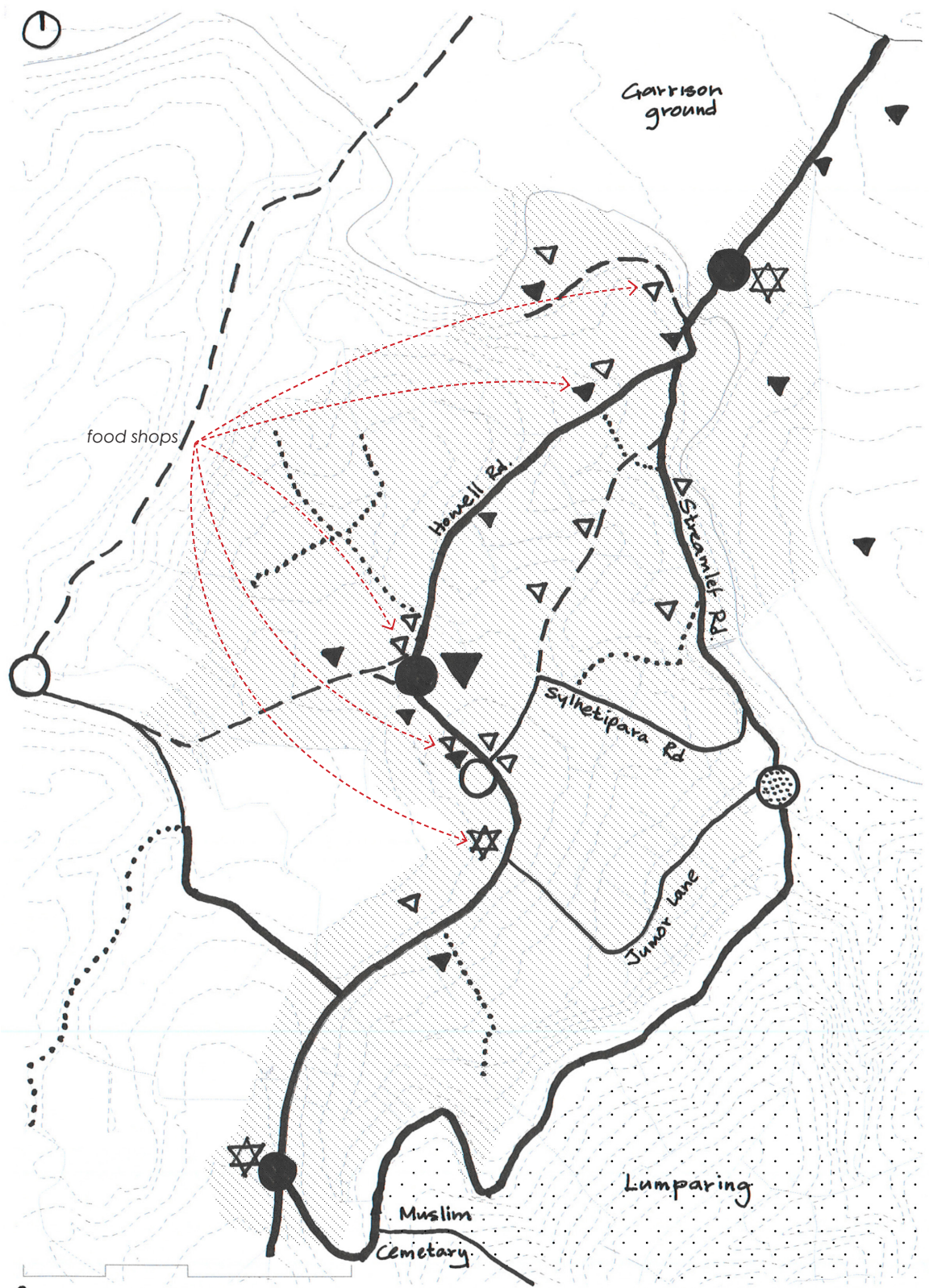
In the verbal discussions the respondents were asked questions related to what they found most distinct in the locality from the rest of the areas in Shillong. The most prominent answer was that in this locality almost everyone knows each other and that was mostly because of two reasons. Firstly most of the people who settled in this area were joint families residing in close proximity to each other and have lived here for at least three to four generations. So the feeling of mutual respect and understanding between the older generations is present. People usually relate and connect because the parents or grandparents have known each other and grown up together. The second reason being that Laban has local tea stalls and small cafeterias where locals would go to and associate with neighbours. These would be the go to places for people to talk to neighbours to discuss sports, news, politics etc.

They were also asked to list down some important landmarks and places of interest that were important to them individually. They were asked what paths they took to get to these places and also what was their experience as they moved through these spaces. Most of these places were the local tea stalls where people meet each other. There are a lot of small food joints which are highlighted (Illustration 76) which are usually the places of interest for people. Food and local eatery joints are places which bring people together in the local Khasi community.

They were asked why they liked to stay in this neighbourhood. The most generalised response to this was the fact that this neighbourhood was a mixed community and having different groups

of people living together brought with it greater sense of togetherness. One of the respondents further explained that the reason for this is probably because tribals and non tribals have stayed in this area for the longest time. The non local people living in this area are now at least the fourth generation of inhabitants. It is also for this reason that new tenants who come to this area are also the non locals because they feel more secure to live in a community where non tribals are more welcomed and assimilated into this diverse community than other areas of the city, as said by one of the respondents. The respondents also highlighted that walking was one of the most prevalent way of commuting to other areas of the locality.

Not many of the pedestrian streets were highlighted through the interviews since some of these streets didn't have names so it was more difficult to describe them. It may be pointed out that through the verbal interviews most of the areas pointed out were the landmarks rather than the streets or edges. The important streets that were highlighted however were the main vehicular access roads, highlighted in thicker line (Illustration 76).



	Paths	Edges	Nodes	Districts	Landmarks
75-100- %					
50-75- %					
25-50- %					
0-25- %					

Illustration 76 : Mental map of Laban through verbal interviews
Source : Author, drawn from mental maps



Fast food corner, is one of the local food joints which is very predominant in the mental image of most of the respondents. Although not very striking in its image or physical form this place was highlighted because as described by one of the respondents the owner of this food joint used to have a small street kiosk where they would make good quality local food and was very popular among the locals. But over the years the owner made enough money to set up his own shop and till date people would still go to this place because of positive past experiences.



"Appayani", this is a store most recognisable by the residents. Although it does not appear very significant in terms of the physical form but the meanings associated with its usage are the factors which draw people to this place. It is a place where a lot of the inhabitants would go to, to grab a quick cup of tea or have some of the local food.

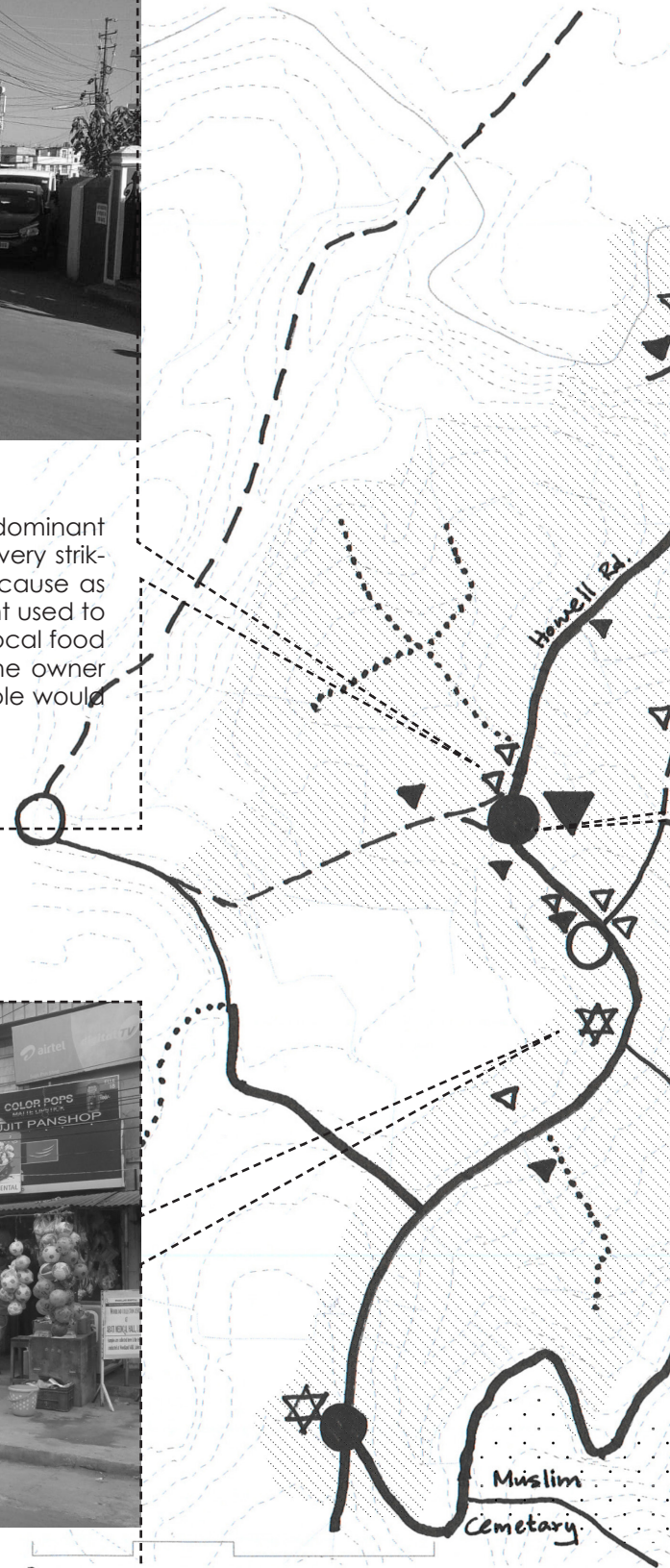


Illustration 77 : Mental map of Laban through verbal interviews along with images of important points on the map

Source : Author, drawn from mental maps



A unique feature which existed in the locality of Laban was the Bati Bazaar which was a thriving market area where local residents could sell their produce. Today it has been converted to a parking lot. The unique feature of this market was the 'dongmusa' or lantern which used to light up the market area at night showcasing how trading was done in days gone by. In an article published in "The Shillong Times", a local newspaper Janet Moore Hujon writes about how this market was once the sight of fresh produce, colourful fruits and vegetables and "silver-scaled fish all neatly laid out on green banana leaves" Places like these were where trade flourished she explains and underscored the meaning of the impression of "word of mouth" which was expressed with a sense of familiarity that is nonexistent in today's borderless universe of online shopping(Hujon, The Shillong Times, 2017).

This market was also located in what was the heart of the locality and close to a church set up in 1905 which was one of the earliest in the city and the locality.

The loss of such important landmarks or elements adds to a further loss of identity of the locality which are further brought about by pressures from rapid urban growth.

The discussion above describes how there is a loss in meaning to some of the more imageable elements of the city. The degradation of the quality of the public/semi public life is not only noticed in the movement networks but also in the few places which have important landmarks around.

5.1.3 Movement networks

The results of the interviews and the mental maps indicate that there are primarily two types of movement networks in hilltowns. The first more important and more imageable to the locality are the vehicular or main access movements which is depicted here in the image below (Illustration 78). The second type of movement pattern is depicted in the proceeding image (Illustration 79). These are the pedestrian or the informal pathways

which provide accessibility to the more inaccessible parts of the locality which cannot be easily accessed by roads.

What is gathered through these maps is the movement networks as some of the most significant aspects of the urban environment which contributed to the imageability of the place. When the respondents were asked to draw the maps these



Illustration 78 : Mental map of Laban through sketchmaps highlighting the major street network

Source : Author, drawn from mental maps

were the first things which the respondents were able to draw. This is very much related to their degree of familiarity with the city(Lynch,1960). Most of the visitors or residents always have to pass through the Howell road in order to get to the other areas of Laban locality.

to the entire city of Shillong. It is also the street with majority of diverse activities happen. It is for this reason of familiarity and diversity of street life that occurs on the Howell road that makes it one of the most distinctive and imageable movement networks in the locality.

The Howell road is one of only two access roads through which the locality of Laban is connected



Illustration 79 : Mental map of Laban through sketchmaps highlighting the pedestrian street network

Source : Author, drawn from mental maps

A look at the pathways as the imageable elements of the city.

The Illustration 79 shows some of the pathways which were highlighted by the residents and these correspond to the pedestrian pathways. Most of these pathways merely serve as a short-cut for the residents.

These pathways were initially the private properties of landowners but because of the presense of the local institution which takes care of all of the functioning of the community at the grass roots level some of these paths have just been aquired from the house owners and is handed over to the community("Shnong"). Hence their meaning is more of an extention to private space. Illustration 81 shows how people use these informal paths as extentions of their own private spaces. The proximity of neighbours to each other stimulates interaction among neighbours and also creates a level of comfort felt by neighbours who use these spaces. We notice here that people are more attached to these stepped streets



Illustration 80 : Pathway through the Muslim cemetary

Source : Author

as their own personal extended space. This character of residents feeling like they own this piece of space and treat it as their own is a very distinctive character of the informal paths which makes them stand out from other areas of the neighbourhood. In our discussions throughout this whole section we have discussed so far the distinctiveness and the comfort of these streets and how these add to the meaning.

Imageability on the other hand is a more intangible aspect which contributes to the meaning of the place.



Illustration 81 : Informal pathways with pedestrian activity

Source : Author

Most of these stepped streets are used as informal front yards for the respondents. Their meaning is mostly associated with domestic activities and their character of usage is predominantly a very private one.

These informal pedestrian pathways are dotted with different sorts of activities which symbolise a different meaning with every activity associated with them which will be further explored in the next section. But what can be seen through the images (Illustration 80, Illustration 81, Illustration 82 & Illustration 83) shows the meanings of these pathways not just a mere thoroughfare but a place for performing domestic activities and carrying out social interactions and also a place which provides economic value and also a utilitarian value to the place respectively.

Thus, we can try to also find new meaning to these informal pathways by adding certain characteristic which will enhance the functionality of these pathways as more than just mere movement infrastructures but also a social infrastructure as well.



Illustration 82 : Derelict public water taps next to the informal paths

Source : Author



Illustration 83 : Ammenities shop next to the informal paths

Source : Author



Key map

These stepped streets also performed as multi functional spaces. They contain both the functions of public activities which involve movement as well as semi public functions of meeting and greeting of neighbours. Thus, they are both a movement corridor as well as the public realm for social interactions.

The familiarity of the residents with such spaces creates a sense of ownership for some of these pedestrian pathways so much that some of the pathways are well maintained and cleaned regularly. Familiarity and use of such pathways creates a sense of ownership of the space hence leads to the proliferation of the importance of such streets.

The unplanned and unfacilitated growth has however created a negligence in the importance and use of some of these streets and now becomes only left over spaces between buildings. This leads to all types of problems such as safety of such environments and healthy living conditions owing to the fact that the multi storied buildings create reduction in sunlight exposure.

"Sustaining the meanings and identity of the urban elements and icons (objects, structures and images) is important because they contribute to self-identity, sense of community and sense of place (Hull et al., 1994). Therefore, in any regeneration effort, it is imperative to understand the level and form of attachment and meanings associated with the places to unravel place significance." (Ujang & Zakariya, 2015b)



Illustration 84 : The stepped streets with connections to the vehicular access

Source: Author



Illustration 85 : Social interaction among residents on these paths

Source : Author

5.1.3 Conclusions

Through the verbal interviews the residents were able to explain more into the reasons why some of these places were valuable to them and also the history behind such locations. Some of the pedestrian streets were not described as much in detail in the verbal interviews since most of the small informal streets did not have any street names and were also devoid of any major activities on them.

The informal paths were mainly described as shortcuts for movement to other areas of the locality. This suggested that they are merely movement corridors and are lacking in any significance. However that being said these were the areas where some of the respondents would recollect playing in the most. Since they were free of vehicular movement they would be the places where children would feel safes to play in.

The conclusions of this section suggest that meaning is mostly ascribed to a location by virtue of its value to residents. This value is brought about by how much a place is able to facilitate the needs of the people to achieve their goals. In the cur-

rent condition of the location the different food shops and local hang out areas are what brings the community together. These places facilitate exchange of greetings among members of the community who are from different cultural backgrounds. The historical perspective of the place is also another very important factor which comes into play when discussing about imageability of a place. This is notice through the fact that even though some locations may seem insignificant, their history and story behind them is what is valued for the residents and it is these qualities which can be qualified as adding to the meaning.

5.2 Form

In the previous section we tried to uncover value through meaning and imageability. This section we try to look at the physical setting and attributes of the place which add to identity.

This analysis is based on studying the form of the environment through the various layers of topography, movement networks and built areas. One aspect of what the morphology tells us is the relationship of the built setting to the topography. This is revealed to us through many scales of study from the urban structure level to the urban tissue and building typology level.

For the purposes of this research the form is expressed in terms of scale, landmark and legibility. These have been chosen because as described in the methodology chapter they contribute to a sense of place.



Scale



Landmark



Legibility

5.2.1 Topography and landform

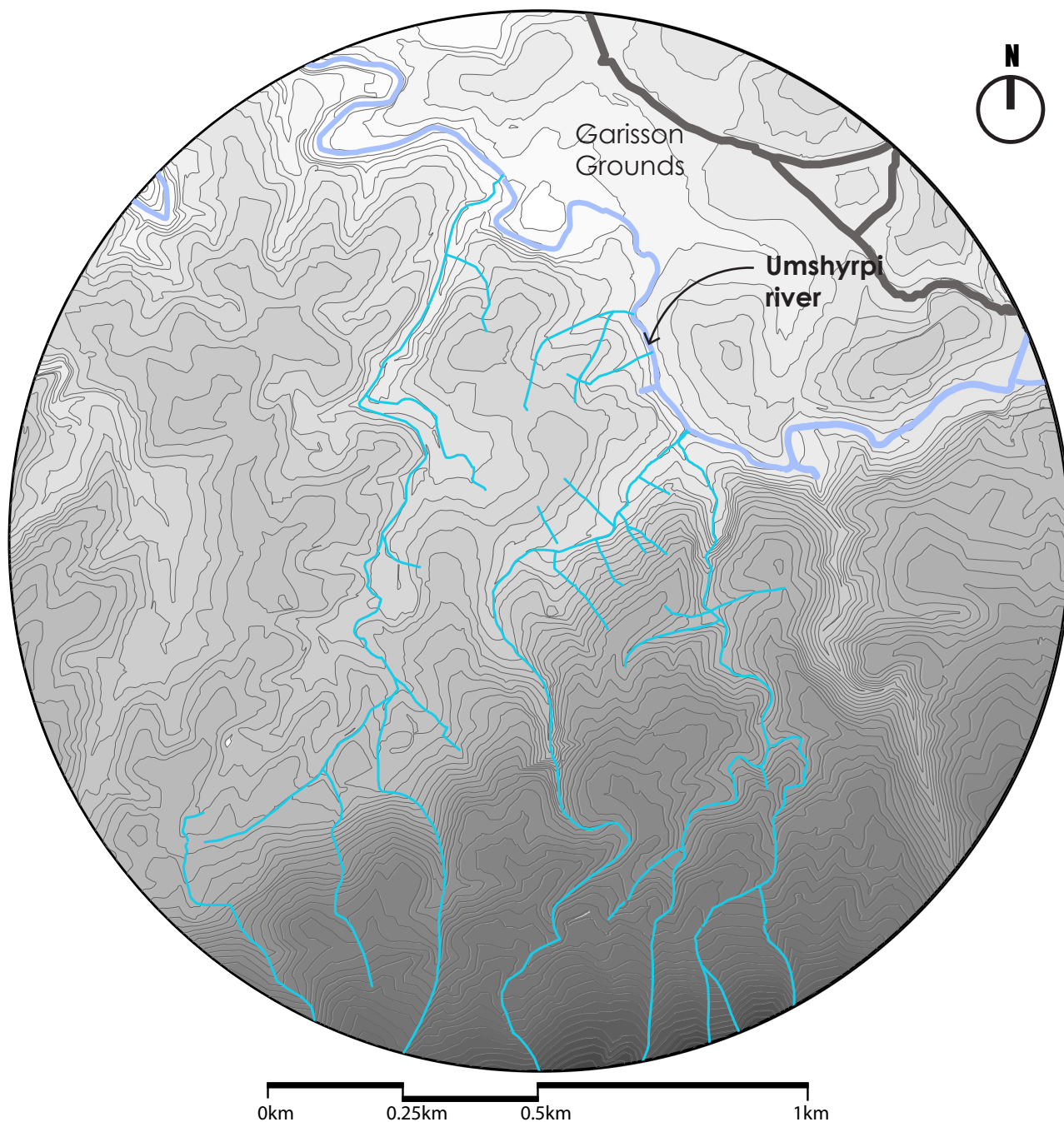


Illustration 86 : Topography and Hydrology

Source: Author, Information retrieved from Shillong Masterplan 1991-2011

The study area shows deep ravines and gorges (Illustration 86). The undulating ravines and steep slopes are challenges for development. The darker shade represents the higher altitude areas in the southern part of the neighbourhood which is north facing and the lighter shade shows the lower areas. What is apparent from the maps is that the area has complex challenges when dealing with the slope morphology.

The natural surface water run off is also something

to be noted in this map. Owing to the extreme slope most of the surface water runoff is through the deep ravines and gorges. Most of the rain water runoff flows into the main stream which is known as the Umshyrpi river (shown in Illustration 86). This is a missed opportunity to be able to re-use the water since Shillong receives a fair amount of rainfall per annum (2 to 2.5m of rain). But rainwater is never used actively for any purposes.

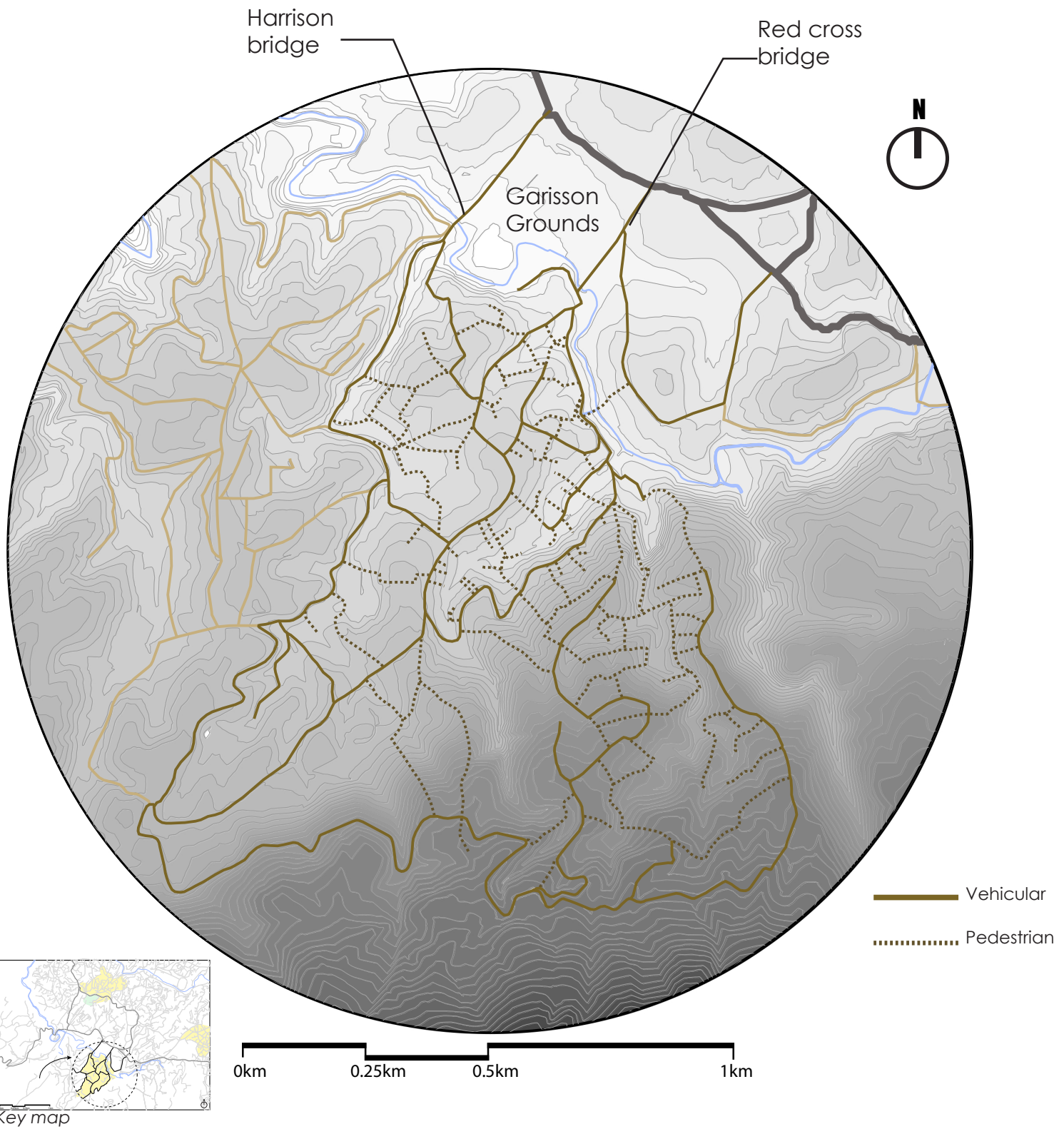


Illustration 87 : Movement networks - pedestrian and vehicular

Source: Author, Information retrieved from Shillong Masterplan 1991-2011

The locality was connected to the main access road through two main roads which are the Red cross and Harrison bridge (Illustration 87).

The map here shows the movement networks throughout the neighbourhood. There is a higher concentration of pedestrian pathways as opposed to the vehicular streets. However, due to

the complex topography most of the linkages in the locality are through informal pedestrian pathways which makes it easier to access the steeper areas of the slope.

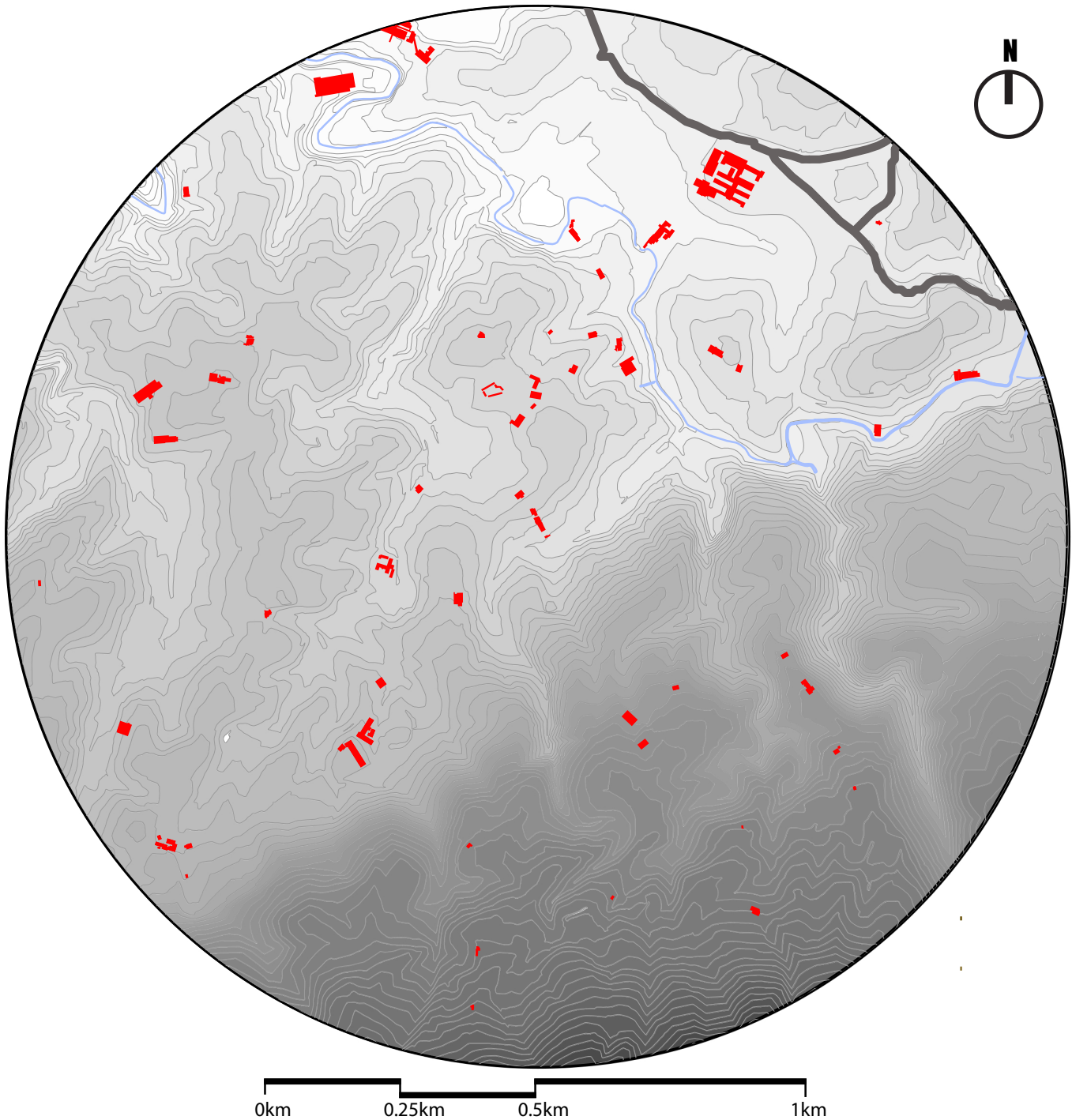


Illustration 88 : Important public buildings in the Laban locality

Source: Author, Information retrieved from Shillong Masterplan 1991-2011

The map above (Illustration 88) shows the important public buildings in the Laban locality. These include educational institutions, religious institutions, health care centres, community buildings and government buildings. The most important public functions are always located on the gentler slopes. For example public buildings such as the church the market area and the community

centre are perched in one of the most ideal and prime location in the locality. As discussed in the previous section these are also one of the most imageable elements of the urban environment.

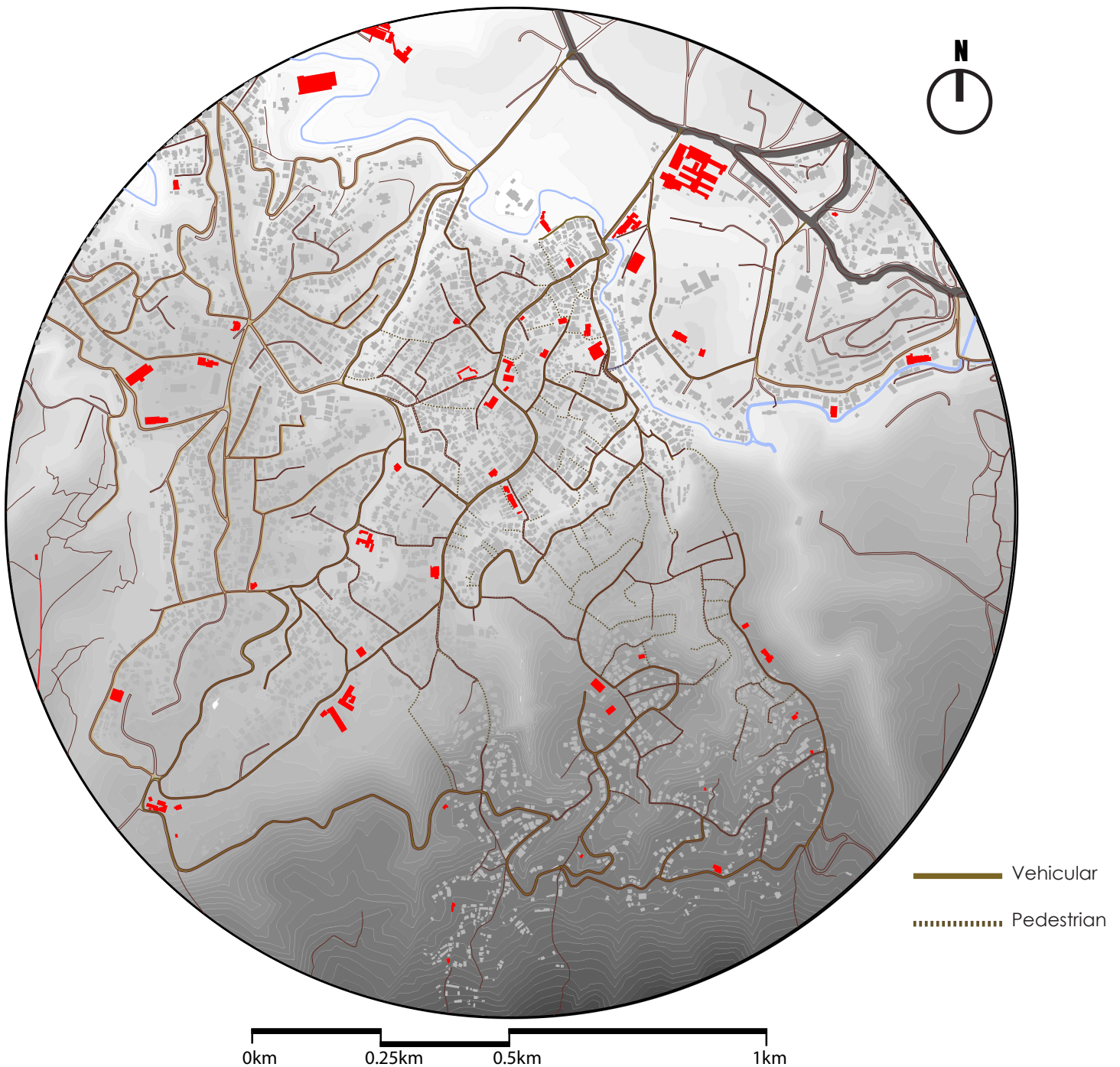


Illustration 89 : Overlap of movement networks and important buildings

Source: Author, Information retrieved from Shillong Masterplan 1991-2011

Although most parts of the neighbourhood are accessed through the vehicular streets, a large majority of the residential areas are still accessed through these informal pedestrian pathways.

The important public buildings are located on areas which are generally the flatter areas with lesser slope (Illustration 89). Some of these public buildings were also some of the important landmarks highlighted in the section 5.1 of this chapter. It is also not surprising that their ease of ac-

cessibility was also one of the reasons that these public buildings were more imageable. Since most of the public buildings are located along the main roads they were more susceptible to be recognised by a majority of the respondents.

To conclude the major artery which is the Howel road is more imageable because of its connectivity to most of the pedestrian street networks which connects to it. This, however does not take into account the importance of these informal

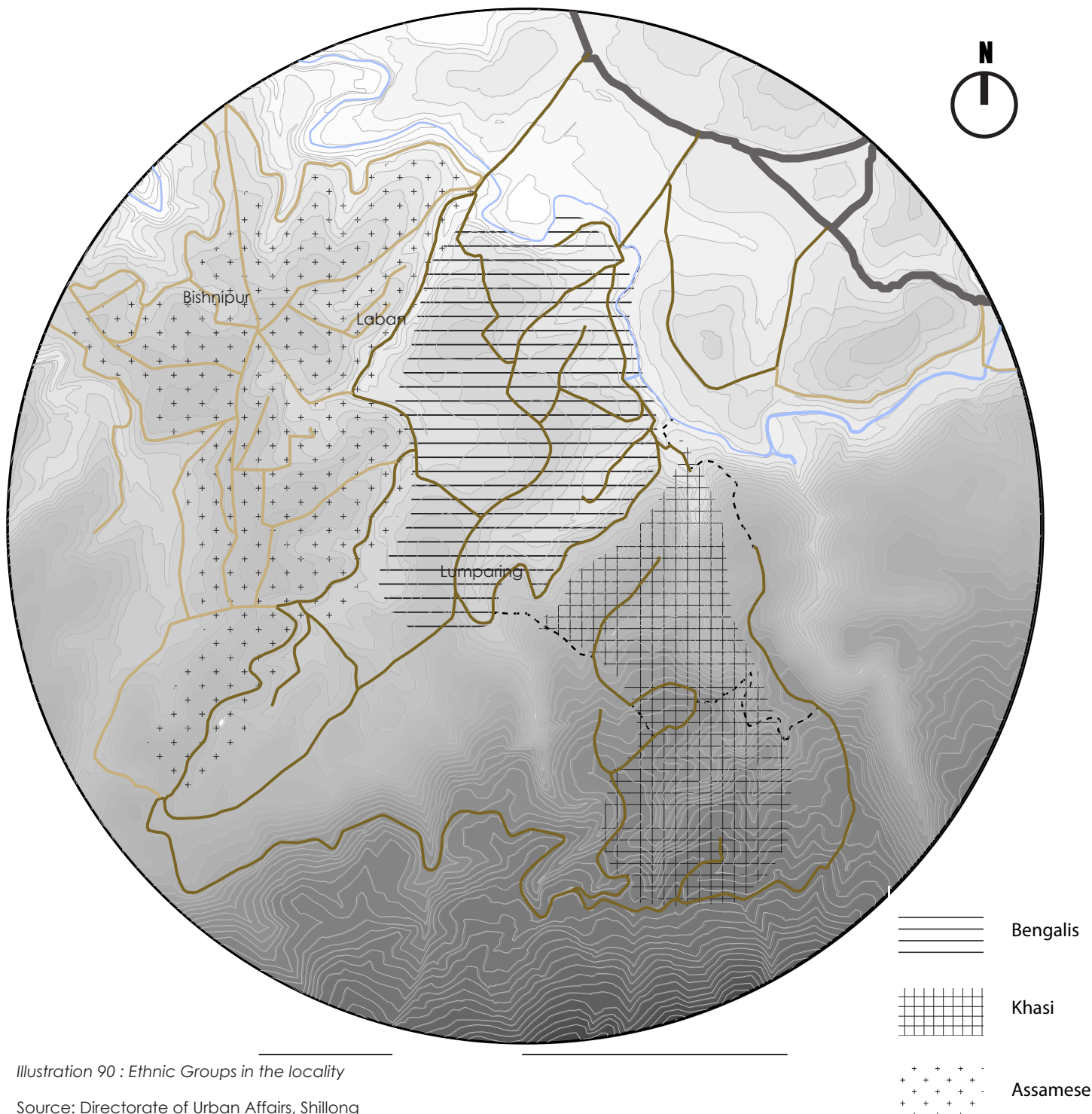


Illustration 90 : Ethnic Groups in the locality

Source: Directorate of Urban Affairs, Shillong

pedestrian pathways since they allow for connectivity to these major roads.

The map above (Illustration 90) indicates the areas of the localities which have a majority of the tribal and non tribal populations live. The tribal (indigenous) people who are the Khasi's mainly reside on the steeper slopes in the locality of Lumparing. The non tribals (Bengalis and Assamese) mostly reside in the lower areas of the locality which is Bishnipur and Laban.

5.2.2 Layout of the paths

This section looks at the layout of the street networks which include the vehicular streets and the informal pedestrian pathways and their relationship to the morphology. This is done by taking a certain section of the study area.

When we overlay the movement networks and the topography of the region it can be seen that the primary movement networks which are the vehicular networks in most cases occur along the ridge line of the slope or parallel to the contours.

The main activity spine is along these ridges. These are also the corridors of commercial activities since they lie on the most connected part of the street networks. These streets are also the vehicular streets hence there is a higher intensity of movement of traffic, both pedestrian and vehicles, on these streets.

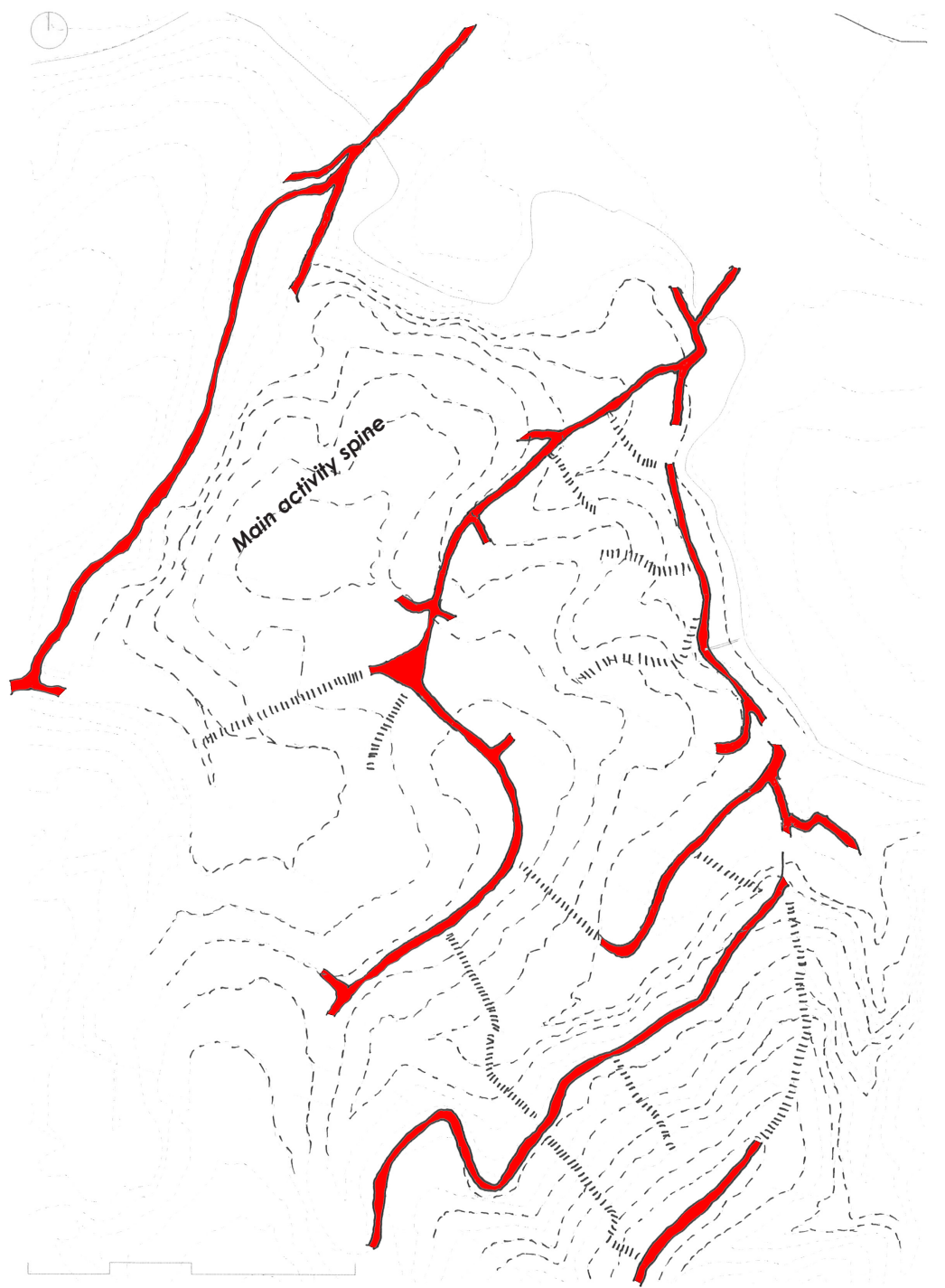


Illustration 91 : Map of different important vehicular streets of the neighbourhood

Source: Made by the author

i) The Main Street

Most of the pedestrian movement networks culminate into this main street since it is the main access road for the entire neighbourhood.



Illustration 92 : Image of the main spine of Laban where most of the buildings hug the street

Source: Author



Illustration 93 : Image of the main activity spine of Laban showing the start of the street

Source: Author

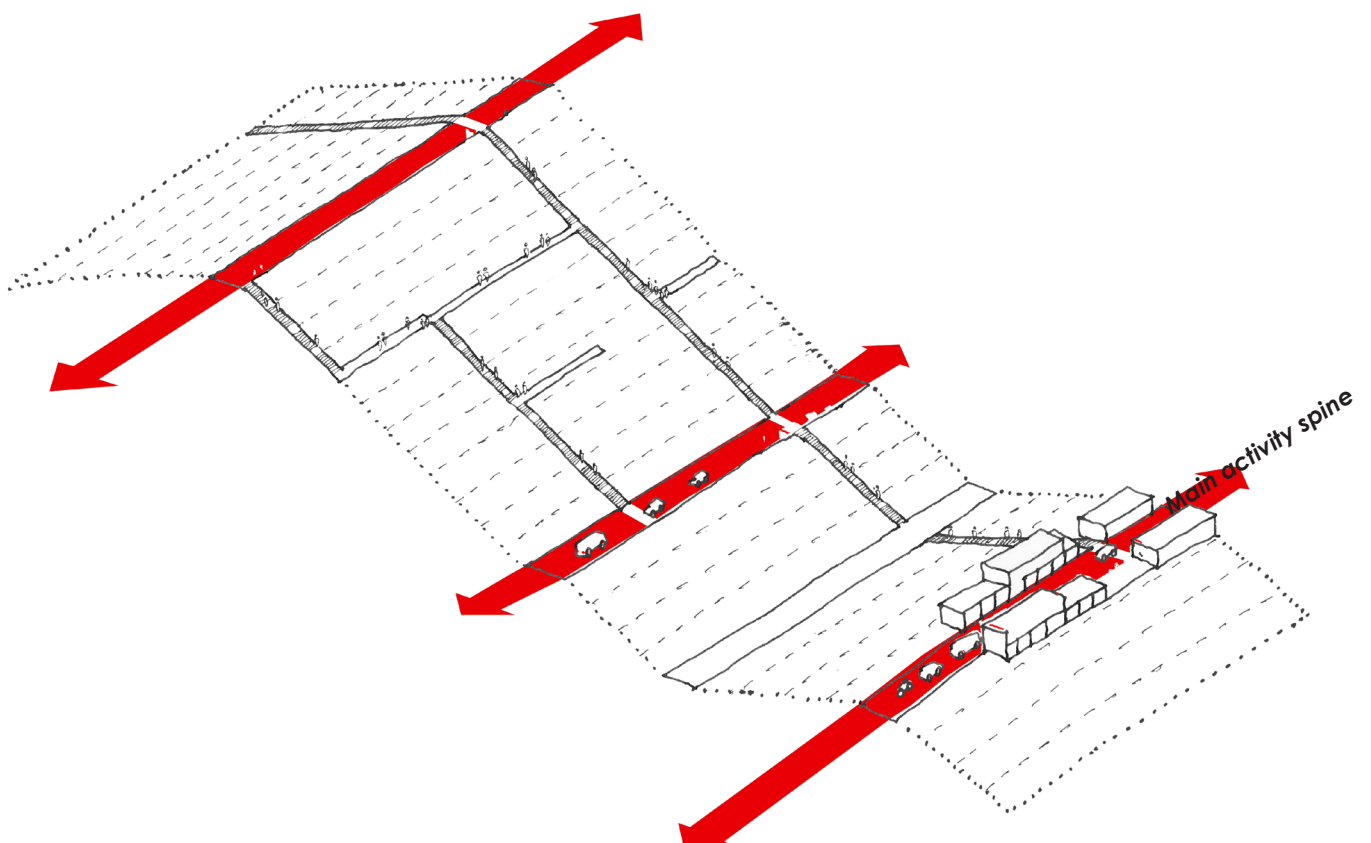


Illustration 94 : Depiction of the relation between the topography and the movement networks

Source: Made by the author

ii) The Secondary street

The pedestrian networks on the other hand occur at almost a 90 degree angle to these contours shown in the image below (Illustration 95)

The streets are therefore layed out in a grid like pattern of vehicular and pedestrian movement patterns at right angles to each other. This is explained in the sketch in the image on the next page (Illustration 96)

These pathways although are public paths are witnessed to semi private activities on them as well. Pedestrians use these streets to sit on them and

chat with neighbours or at times people would bring their stools out to sit in the sun. These streets also serve as shortcuts for residents to reach certain parts of the neighbourhood too far to cover by vehicles and would be closer on foot. These streets are narrower than the vehicular streets and are undergoing constant renovation every few years.

Government schemes and funds allow for restoration of these pathways from time to time but only cover a limited amount.

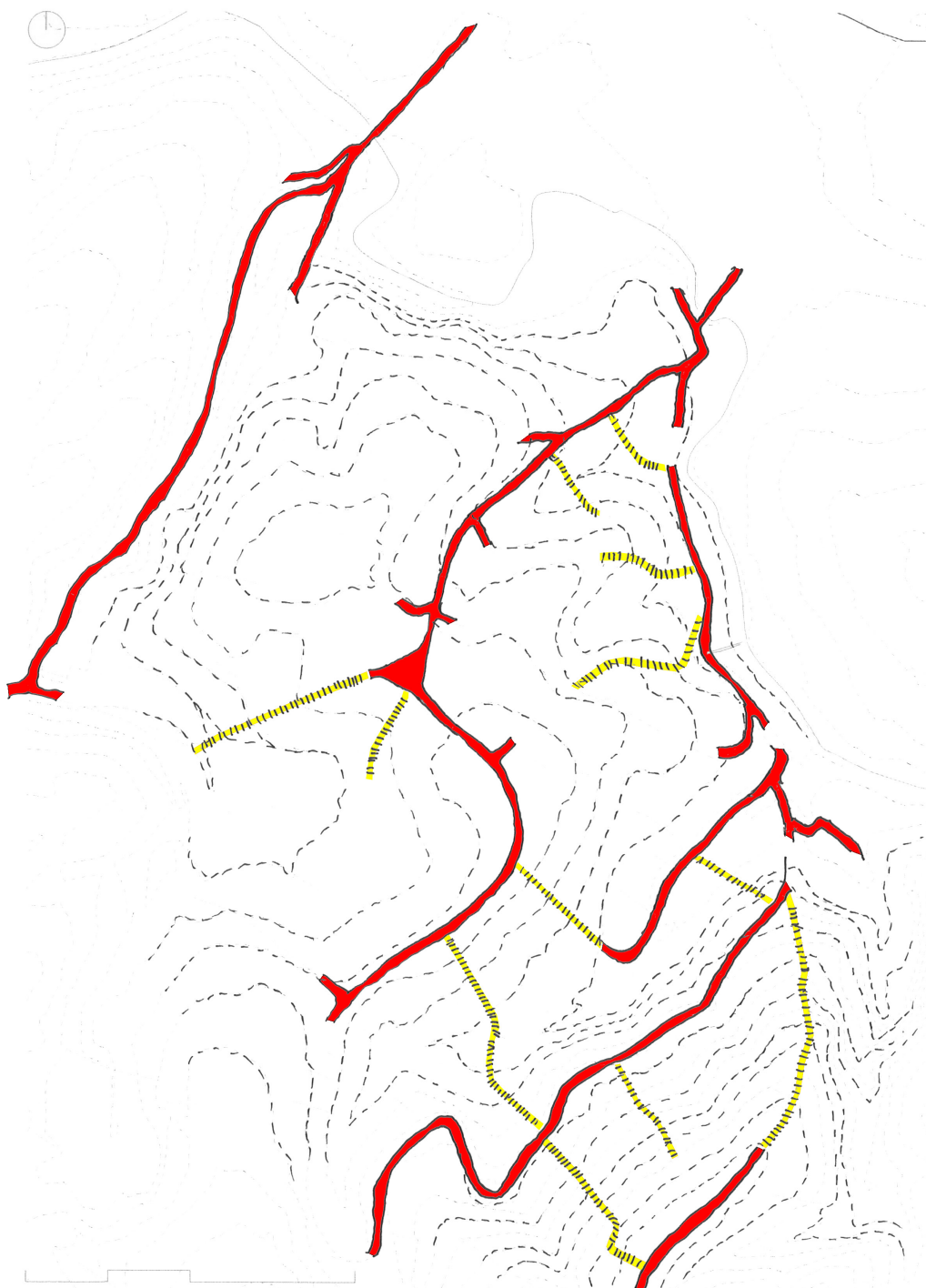


Illustration 95 : Map showing relationship of topography to the two types of movement networks

Source: Author

In the past these streets were mainly private property owned by house owners but as the population increased and more and more plots were coming up which required access. The owners of some of these plots slowly gave away bits and stretches of the land to the local “dorbar shnong” (local institution) in order to clear the way up for accessibility to more plots . Thus, these streets from being privately owned streets slowly turned into public streets for people with a mutual understanding between the residents and the local institution that these streets always remain public.

The maintenance of these public streets are thus mostly under the perview of the “dorbar shnong”(local institution). The “dorbar shnong” collects annual funds from the residents to take care of the maintenance and cleanliness of these streets.

These informal paths are very much the responsibilities of the local residents who take care of the cleanliness of these streets through cleaning drives organised by the “dorbar shnong”(local institution).



Illustration 97 : These streets sometimes serve as shortcuts and at other times are access to plots not accessible by vehicles
Source: Author



Illustration 96 : The pedestrian streets which run at right angles to these vehicular streets
Source: Author

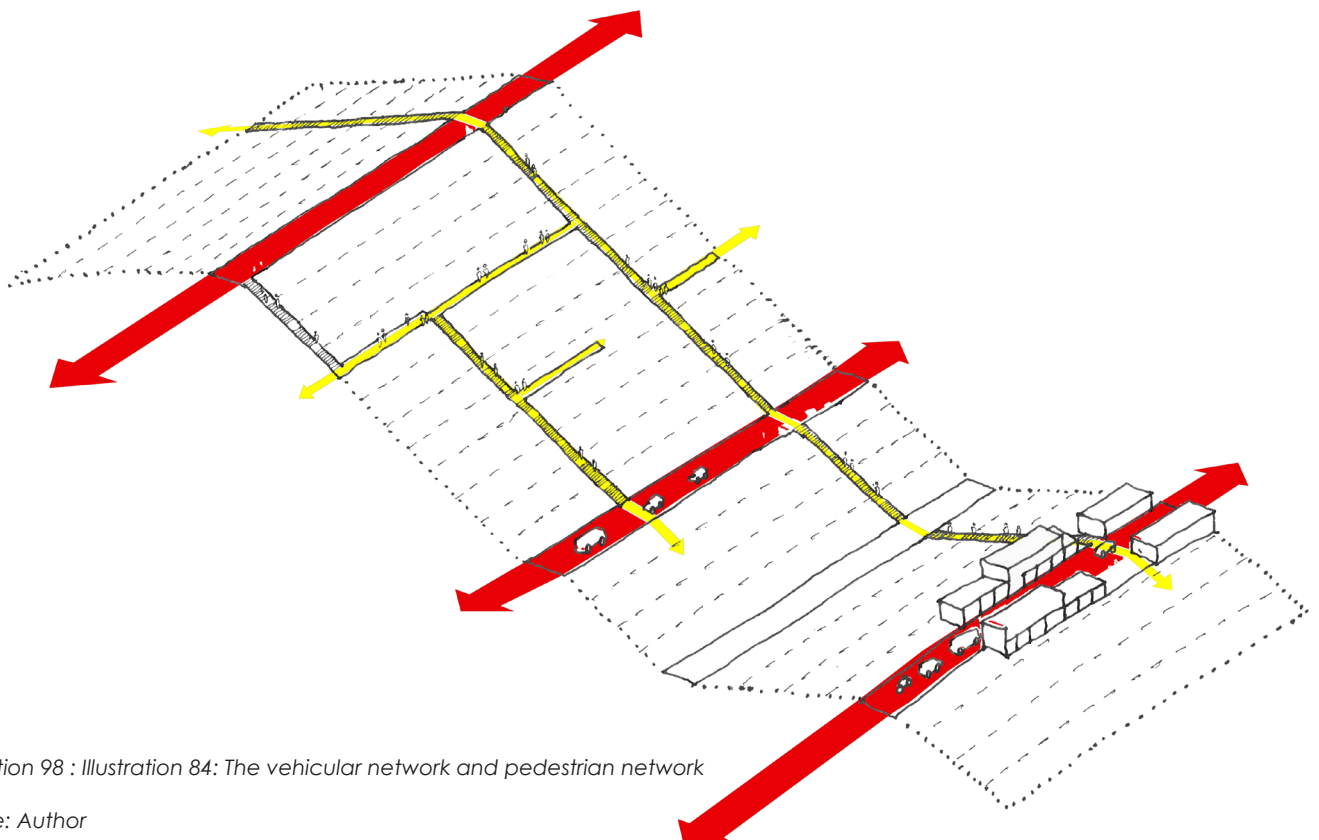


Illustration 98 : Illustration 84: The vehicular network and pedestrian network

Source: Author



Illustration 99 : The pedestrian street network
Source: Author

Since some of these streets are the access corridors for most of the plots on the hilly areas they usually have a lot more openings on to the street. This facilitates engagement between neighbours on these streets. However, with the new multi-storied buildings coming up most of the openings on to the streets are replaced by high walls which results in dead alleys.

In some cases these streets do have openings on to them and hence facilitate a more vibrant street life.

The narrowness of these streets in some areas facilitate for interaction and greetings among neighbours. The close proximity of the built up areas on to these streets also facilitates the concept of eyes on the streets (Jacobs, 1961) which also contribute to public safety on these pathways.

This is an aspect of the stepped streets which adds to vibrancy and safety of the public realm. Thus the narrowness of these street pathways is which adds value to the quality of life among inhabitants through allowing for public interaction.



Illustration 100 : Interaction among the neighbours on the narrow informal paths
Source: Author

5.2.3 Spatial characteristics of the nodes

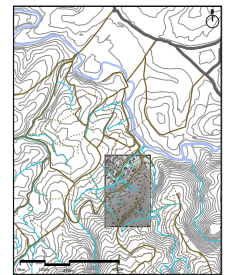
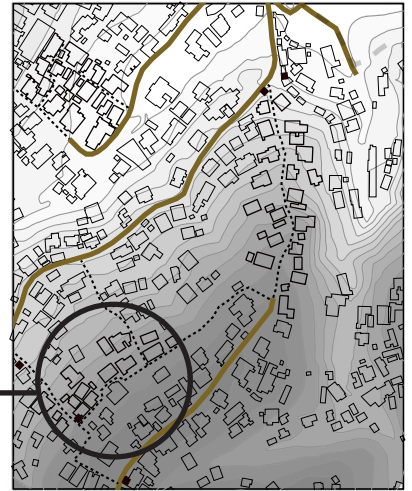


Illustration 101 : The stepped streets make up the public life of hilltowns.
Source: Author

People used the stepped streets as an informal semi public area to meet and greet each other on their way home from work or just on a walk to the local market area. Some of these streets are scattered with small informal shops which serve some of the local population in the different localities. These are located along the stepped streets and sometimes act as a meeting points for local inhabitants. These local shops are usually located at nodes or intersections which increase their visibility from multiple movement directions.

networks and these are the places where most off the commercial activities happen. The paths perpendicular to these are the informal paths and pedestrian networks which have a more social value to them. They are much narrower and are more conducive to having social activities along them.

Thus this section concludes that the morphology of the urban settlement is geomorphic and the movement networks is a result of response to the topography. It is because of this reason that it has created two distinct typology of movement networks. One along the contour and the other across the contour. The pathways along the contour and ridgeline are the primary movement

5.3 Activity

As mentioned in the methodology chapter activity is a product of two factors which is diversity and vitality. Diversity corresponds to the variety and range of activities which can take place in an area and vitality relates to the activeness of this street or place through the various seasons of the year or days of the week or hours of the day.

The analysis of activity is done through spatial analysis and activity mapping on maps. The more intricate activities which happen on various points on the maps are done through making observations on what are the different usages of these pathways and activities which happen on them. This analysis was also aided by interviews conducted on the residents.

The intent of this aspect is to uncover what aspects of the usage of the streets contribute to a more socially integrated neighbourhood. It will also help us uncover what are the values people place on activities which happen on the streets.

Activity as discussed in the methodology chapter relates to diversity, opening hours, street life, fine grain economy and people watching. These are some of the aspects which are looked at with respect to this research.



Diversity



People watching



Street life



Opening hours



Fine grain economy

5.3.1 Activities associated on the city neighbourhood level

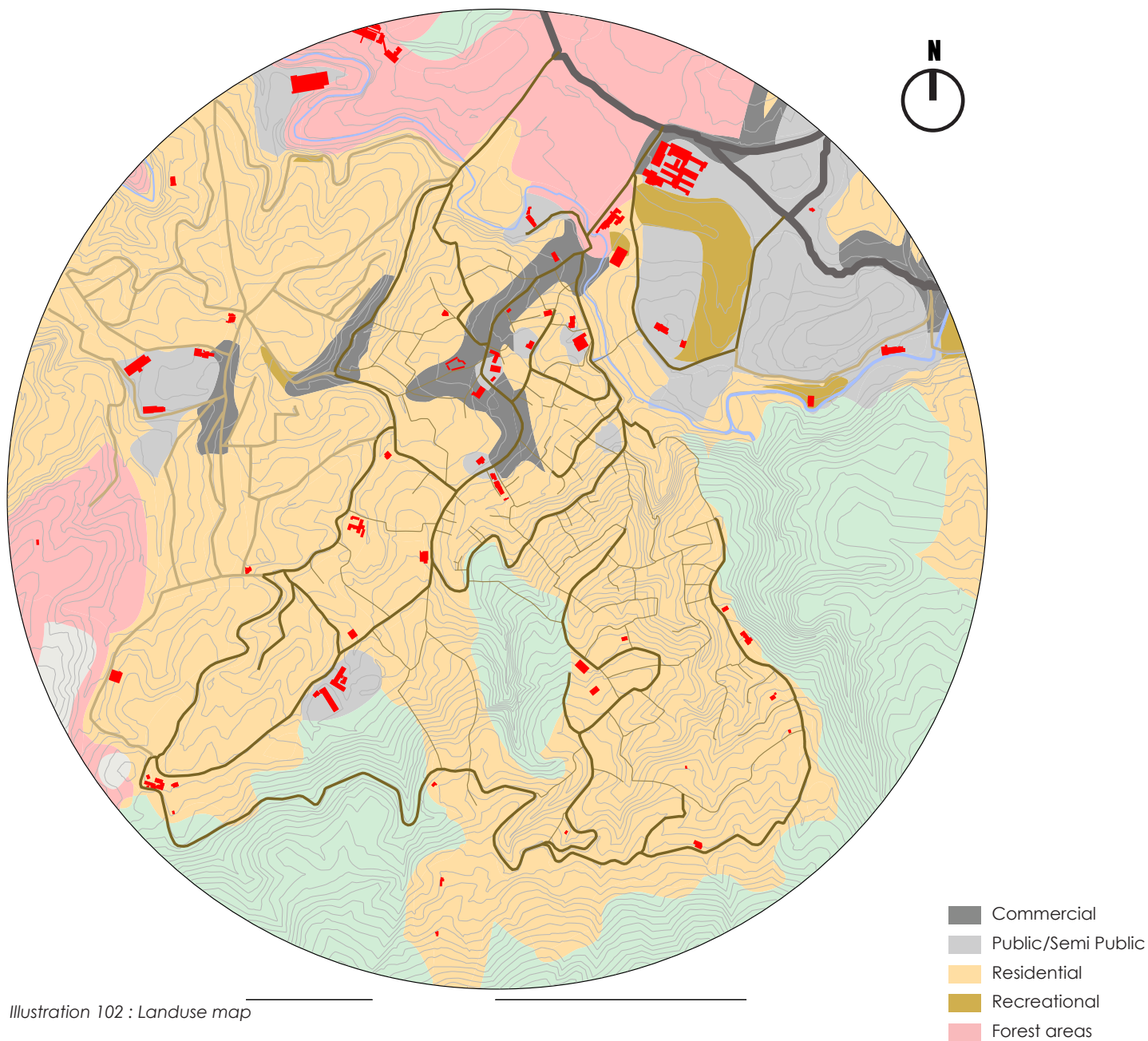


Illustration 102 : Landuse map

Source: Author, Information retrieved from Shillong Masterplan 1991-2011

The map (Illustration 102) depicts the land use map and shows most of the areas on the map as residential. The forest cover and green areas are mostly towards the steeper slopes. The commercial areas are only on the main road (Howell road). The commercial activities also add to the liveliness of the main street. The forest area which is located in the steeper slopes is a positive element which has a positive impact on the quality of life. One of the respondents interviewed mentions that the clean air in the higher reaches of the neighbourhood encourages people to walk more rather than use vehicles.

As was pointed out earlier Shillong used to be known as "the Scotland of the East" due to the green hills and lush pine trees. Due to urbanisation trend a lot of the green cover around the city of Shillong have been lost. A strategy to bring back this previous image of Shillong can be to use these pathways as a way of reintroducing back green areas into the city. This could help foster a more walkable city.

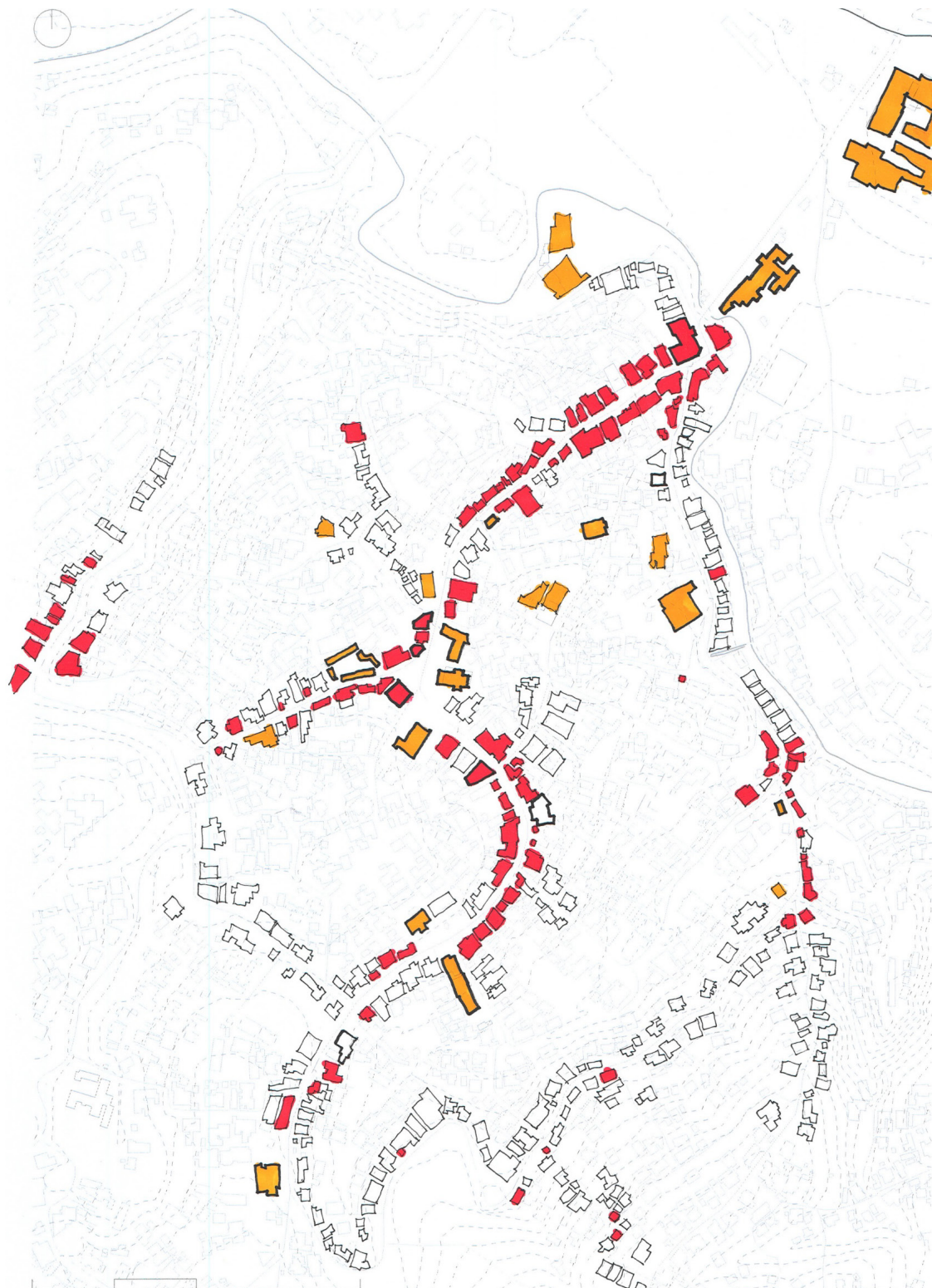


Illustration 103 : Main activity areas usually occur along the main street
Source: Author

The image above (Illustration 103) the commercial activities highlighted in red. Most of the commercial activities are usually departmental stores, food cafe, taylor shops and jewellery shops. The orange indicates the institutional buildings.

A correlation can be made here as to the relationship between the activities and the image-

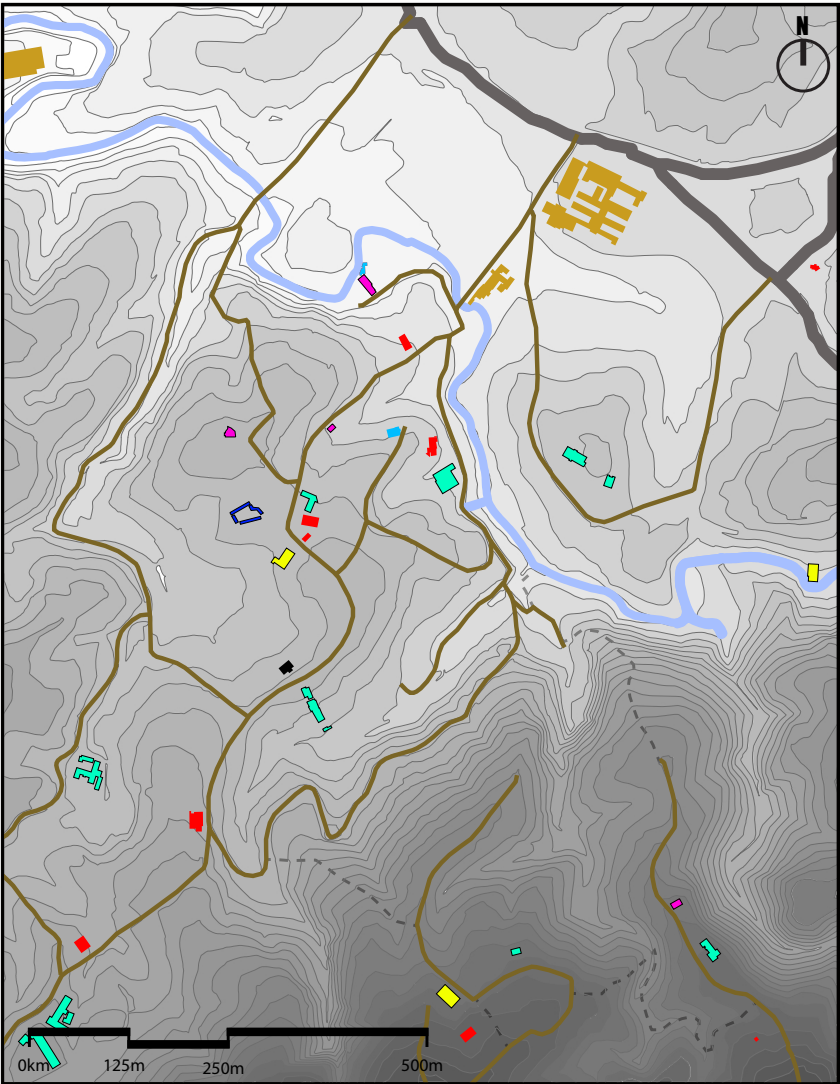
ability maps prepared in the previous sections. The most imageable street is also the one with the most number of public related functions on it.

5.3.2 Activities associated on the main nodes

The image below depicts the various public buildings present and their use (Illustration 104). The presence of a mosque, a church and a Hindu temple shows that there is a closer relationship that exists among residents that does not exist in most other neighbourhoods in the city.

This is also because of the fact that this was the area where the original service men who were brought in from Dhaka resided. They were mainly of the muslim community and hence have been living in the area over a 100 years. The presence of the Hindu community also represents the time when Shillong was the state capital of the entire region of Assam. People from the neighbouring state of Assam started to flock to the state since it was the centre of administration. Most of the people who were coming to these areas were from the Hindu community. The original settlers of the locality who were the Khasi people mostly converted to Christians after the arrival of the missionaries from Europe. Hence, we see another community also present here.

The place where the market area, the church and the community hall is are all in an area at the highest point on the hill. Because of the higher value these functions played to the life of the citizens, they were chosen to occupy the most important part of the settlement. The vehicular access are closely connected to the important public buildings. The main important streets are always located along the ridge line of the topography.



- Church
- Temple
- Mosque
- Market
- Community Hall
- Institutional Building
- Police Station
- Civil Hospital & Red cross Building

Illustration 104 : Important public buildings

Source: Author, Information retrieved from Google Maps

5.3.3 Activities associated on the informal pathways

This section introduces the small intricate activities which happen at the urban tissue level and helps us define what values of the activities adds to identity and place making. These activities contribute to a more active street life as well as have a diversity of functions.

i) Diversity

Public water taps -

Being one of the oldest localities in the city of Shillong this locality has been in occupation for atleast a hundred years. When this place was first

settled some of the means by which residents got their supply of water were from the local springs which the locals channelled to collect it in local reservoirs. These water supplies were then distributed throughout the locality by means of the public water systems and were collected from these local water taps. Today most of these local water taps are discontinued or no longer in use and only some of them are still in use. The reason for their discontinuation is mostly owing to the fact that water meant for these taps has mostly been distributed to other parts of the city.



Illustration 105 : Discontinues water taps
Source: Author



Illustration 106 : Still functioning water taps
Source: Author

These are the places which fostered social interactions and served as the public gathering spaces during the early hours of the morning. These water systems were very much prevalent and important part of the history and evolution of the place. The most important functions originated around public taps. For example, the area next to the night market, as one of the respondents interviewed says, used to be the location of a local tap which used to be the water supply point for most of the areas around the neighbourhood (Illustration 107).

These local taps are an important element of the



Illustration 107 : Old image of "Iewdak" (2012) Night market location
Source: Author

urban form. They have an activity associated with them which is based on people coming to these areas in the early morning hours to collect water from them. They have a form based aspect related to them owing to the fact that these areas usually occupy a larger landing space and lastly, they have a meaning associated with them which is of social importance. Public taps are the hubs of small community interactions.



Illustration 108 : Image of "Iewdak" from 2019
Source: Author



Vegetable vendors - Another of the activities which adds to diversity is the presense of the informal street vendors. These street vendors are present all throughout the neighbourhoods. They are mostly residents of the neighbouring areas and come sell their local produce.

Illustration 109 : Street vendors
Source: Author

ii) Vitality



Illustration 110 : Local street food

Source: Author

One of the aspects which is related to an active street life is its vitality. This means that different functions can happen at various times of the day.

Street food - These informal street shops open in the evening timings and are usually just temporary make shift structures made by the owners. They have no permanency but contribute considerably to an active street life especially in the evenings when one sees people coming back home from work usually just grab a bite in one of these shops.

Most people who open these shops work during



Illustration 111 : Local street food next to water tap

Source: Author

the day elsewhere and open these small food shops for the extra income. Having small niches along the pedestrian paths which primarily serve as resting points could also serve a dual purpose of providing a space for these paths during the evening timings.

The image to the right shows the local street food vendor and it also shows a water point. These areas are active during the morning hours for people to collect water and during the evening a different activity takes over.

iii) Fine grain economy

Local ammenities shops-

These shops are mainly owned by the residents themselves. Most of these shops are very vital to facilitate the life of the inhabitants on these hilly areas. One of the most important reasons is because these areas are extremely hilly and the main market areas and commercial areas are located on the more gentler slopes along the main activity spine. These shops are thus more of a convinience for the local residents to quickly pick something up from the closest ammenity shop without having to go to the main commercial area. These ammenity shops sell anything from small household goods to food items. Sometimes they also serve as small tea stalls and sell refreshments for the people moving on these streets.

In one of the interviews with the residents the respondent explained how they prefer the more quiet residential character of the neighbourhoods. They express their pleasure with the fact that the commercial activities have not spread to these pathways as well. However, that being said, on one of the interviews with the local headman(head of the local institution in Laban locality), Mr. Edward Kharwanlang, he says that the smaller ammenities shops are favoured in these areas because they allow for safety and security in the streets even in the late hours of the night.



Illustration 112 : Ammenities shop and street signage

Source: Author

To conclude this section illustrates some of the important values some of the activities prevalent in the context are to the people. Activity is one of the aspects of identity which contributes to a place dependency in the area. These local food shops and water collection points are the hubs of social interactions among neighbours on these pedestrian streets. What may be noted is the fact that with the changing typology of buildings in this area, this will bring about new tenants into the area. Activities which support the seamless assimilation of new residents would be important to preserving the identity of the area. Preserving and facilitating such activities along the pedestrian networks would greatly add to the place making of these streets as the bustling streets of

diverse functions and use during different times of the day by different groups of people.

5.4 Future Perspective

The aim is therefore to see how form can be used to stimulate activity and build a positive image in order to create a strong sense of place.

5.4.1 Values

Having discussed all of the previous section it is important to conclude what aspects of the informal paths to value and to preserve. Also considering the current trends of the changing social structure of the neighbourhood due to rise in the mid rise building apartments it is also important to consider what future this holds for these informal paths.

Values important in history

As discussed in the previous sections we see that value comes from the level to which a place necessitates our basic needs and another part is the value the place has in history, which essentially means the history behind it and the continuation of that line of story. The public water systems were a very important part of the life and the usage of these pedestrian paths. This inculcated a more collective society and hence the streets were treated more as a collective gathering space.

Values in use today

The semi private nature of these informal paths as an extension of the residents private space is also an important factor to be considered as these streets were once a part of the private realm of the residents but gradually with time have been given off to the community as part of a mutual understanding between house owners and the "dorbar shnong"(local institution). The cleaning drives organised by the local dorbar shnong is one of the most unique activities which is prevalent in the Khasi society. This is an activity which happens twice a year or sometimes more than that and is organised by the members of the "dorbar shnong"(local institution) to maintain the streets. In these activities the residents participate in cleaning and clearing up of the pathways of all waste and also trimming and grooming of the vegetation on these streets and paths. The current conditions sees these informal paths only as a movement corridor and hence there is a neglect in its physical form.

Values important in the future

Health as a very important part of peoples per-

ception of urban living. The renewal of these streets to make them friendly for joggers and people who go on early morning walks would be a good addition to the activities already happening on these pathways and will also help in promoting a city much more inclined towards pedestrian movement rather than vehicular traffic. A lot of the government initiatives in the city are inclined towards a clean green city. Owing to intense traffic congestion in the inner core areas of the city a more pedestrian oriented city would be highly valued.

The design for this research is based on a framework formed at the start of chapter 3 on methodology which is based on form, activity and meaning

These three aspects are described here how to implement them on the research area.

5.4.2 Form

Form is derived from the scale and legibility of physical elements of the built environment. Elements such as the cleanliness of the pathways and the uniformity of the paving material register more strongly in one's mental image.

The values obtained from the analysis indicate what aspects of the physical setting are meant to be protected and valued and what aspects to be either removed or changed. These streets are sometimes quite narrow in width and are in most cases quite steep. Through some of the interviews conducted people mention that these streets are used as a training field for runners who jog up these streets.

The accessibility and openings of the houses to these streets are very important since these facilitate the interaction between the houses and the streets. Even a smaller hedge and a gate opening on to these streets would result in a more porous street to house interface and facilitate a view of the street atleast.

Bringing back the green into the city. Currently these streets are all paved up with no room for water permeability. With Shillongs new campaign towards a clean green environment and the governments initiative to increase the number of trees in the city this would be a good way to improve lack of greenery in the congested and dense areas of the older parts of the city.

5.4.3 Activity

Activity is derived from those functions that contribute to the vitality and diversity of the street life. New activities will have to be incorporated while thinking of the demography of users who will come and live in these areas. The changing conditions of life in the capital city of Shillong will at-

tract more students into the city. This also results in more rental apartments being brought up which will result in more youth on the streets. These local food joints are essentially the go to places for most of the youth. The informal food joints which are present along these streets seem to be a magnet for social interactions and meeting points for the locals. Shillong is known for its variety in street food and there is never a short supply of such vendors when one ventures out on to the streets. Assigning areas where these street vendors can set up shop along these pathways would be a good strategy to facilitate public life on these pedestrian streets.

The revival of the public water taps system will see a renewal in the attractiveness of these streets. These are no longer used only for collecting water but also serve as local drinking water points for joggers and runners on the pedestrian paths. Other activities such as the local ammenitites shops and the street vendors facilitate meeting points for people along these paths. Even though people may not know each other but these places acknowledge the presence of others on the streets. Thus these activities occuring in small hubs would contribute to the pathways vitality through different functions happening at different times of the day and the diversity of choice of activities happening.

5.4.4 Meaning

The form and activity contribute greatly to the meaning of these pathways. Adding new function which is of environmental value can also be very helpful in developing a new meaning to these pathways. The conversion of these pathways into a rain water purification system would give a very important value to these streets as vital elements of the city. Since shortage of water is always a problem this system would play a crucial role in fulfilling some of these demands.

The meaning is also derived from the imageability of these streets. This imageability is built on the narrative and story of a place as in the case of the the public water taps and how they were once the hubs of social interactions. They were also the places from where commercial activities such as the night market("iew dak") originated next to as explained in the previous sections.



Design Intervention

This chapter helps us evaluate the principles for the design discussed about in the theoretical and analytical part of this research. This will help us understand how the values which were brought forth remained valid for achieving the goal of re-defining the informal paths.

6.1 The streets as a social infrastructure

The overall approach on the larger scale is to transform these pedestrian pathways to the social infrastructure of the city in order to facilitate a more inclusive and cohesive community feeling among the residents of the neighbourhood. Public life on these pedestrian streets hopes to achieve a sense of collectiveness among the residents and hence inculcate a sense of place and belonging to the neighbourhood. The design intervention is done by taking into consideration the three aspects of the framework into play which are the *form*, *activity* and *meaning* and discussing how the values obtained from each aspect could be used as elements for the intervention.

Activities as an aspect which facilitates interaction among people as well as visitors. This also leads to an active street life as well as a safer public realm. Diversity in the street life basically means more variety of activities to choose from while experiencing the movement along these informal pathways.

The renovation of the *form* and adding of elements such as spaces for seating and enjoying

the urban green results in a renewed urban form and results in place making.

Meaning brought about by a redefinition of the streets as the blue green networks of the city. One system which works for the purification of water using gravity filtration system and the other which works towards bringing back green into the city and cooling of the surrounding locality.

There is a three part categorisation of how the interventions have impacted the new informal streets and these are discussed in detail in the following chapter. These are illustrated in terms of **Social aspects**, **Spatial aspects** and finally **Technical aspects**. Each of these aspects will be described in the following sections of this chapter.

The diversity of activities which happen along the pathways contribute to a more livelier public realm. Clubbing of certain activities together at separate times of the day can contribute to making certain nodes much more imageable as they always seem to have a usage associated with them through different times of the day.

It is for this reason that the design strategy follows clubbing together of certain activities along the pathways and creating small hubs with different functions on them. These hubs have certain aspects of the form activity and meaning associated with them as discussed in the methodology chapter and hence contribute to the place making of these pathways.

The design also looks at ways of finding new meaning to these pathways. The drainage systems present here could be used as a way of filtering and purifying the rain water to be suitable for non potable use. Hence, the pathways are seen as a system of cleaning of water.

The other aspect of these pathways looks more on the experience of moving along these paths

and what one notices and experiences as one climbs through these steps. The users experience of moving through these pathways gives us a set of guidelines on which to base the spatial aspects of the design.

6.2 Design detail

Now we look at the examples from two locations picked in the current site. This first part will explain one area of intervention where in we describe the principles to be used for other areas where

there are informal pathways. These principles are based on three things as explained earlier. The first will be the spatial aspects, the second will be the technical aspects and the third will be the

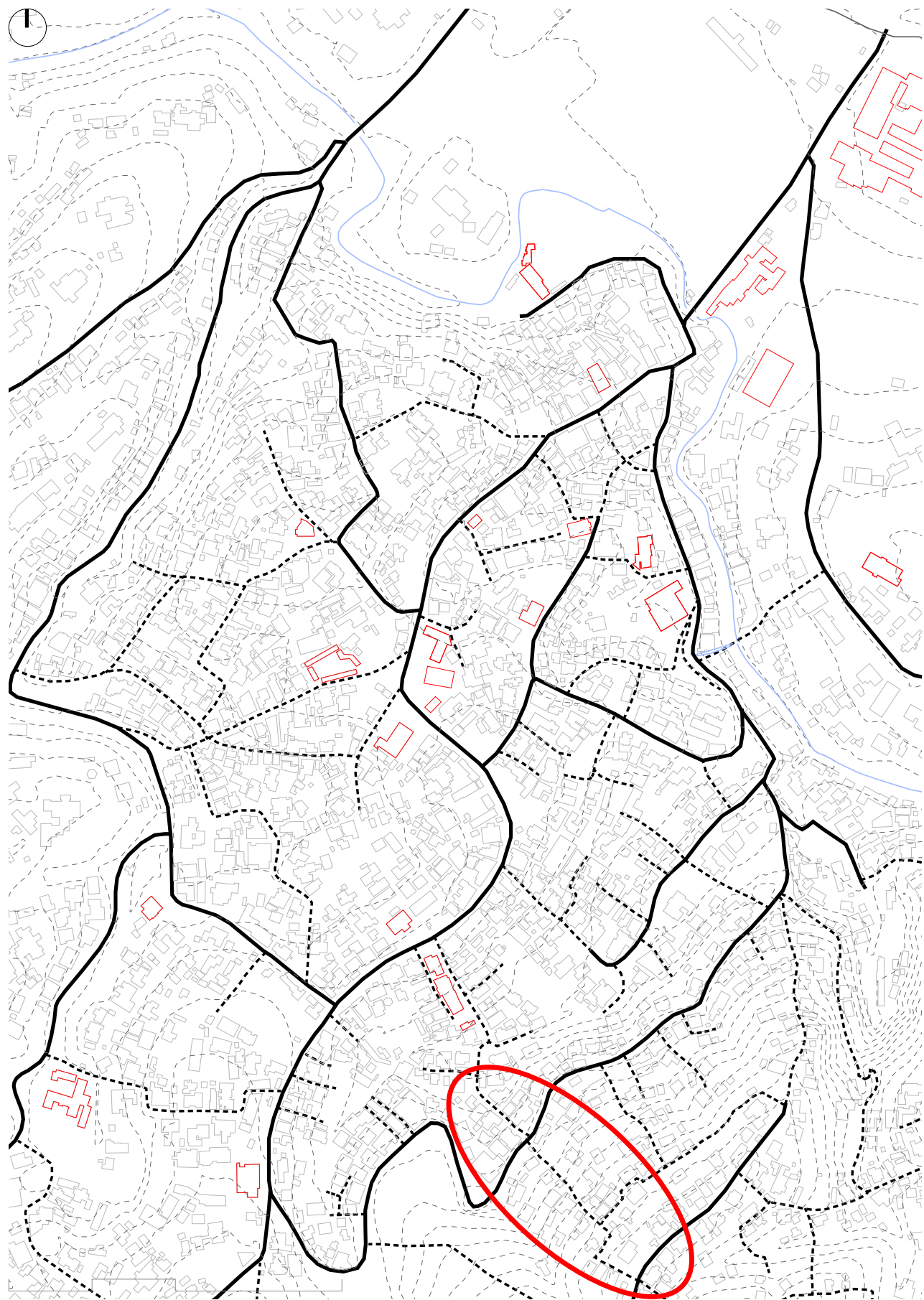


Illustration 113 : Location of study area

Source: Author

social aspects. All these three aspects will be explained by using one of the sample intervention areas.

There are two locations chosen to explain this identity framework which we have explained earlier in the methodology chapter. One of the locations is explained in detail in this section.

This location is at the part of the neighbourhood known as lower Lumparing which intersect the main vehicular streets. This pathway consists of a mix of both the venacular style bungalows as well as new multi-storeyed building complex coming up (Illustration 114).

The current state of this pathway is that it only exists as a very narrow corridor which connects the Upper Lumparing to the main Laban locality area (shown here in Illustration 113). The image shown

below (Illustration 114) clearly shows that these pedestrian networks, shown here in yellow, run at right angles to the vehicular movement networks shown in red. This means that the pedestrian will have a different experience from that of a person sitting in a car if he wishes to go to the Laban locality. He will have a clear view of the entire neighbourhood as he traverses down the steps and follows the pathway ahead of him. This provides an opportunity of making these pathways play a very important role in the readability of cities.

The first design scenario shown here touches upon the three aspects based on the research framework which are form, activity and meaning. Deciding on what to value and what to discard in the three aspects of the framework helps formulate a design in which the future scenario can be visualized.



Illustration 114 : Tissue level organisation of built up areas in relation to movement networks and topography

Source: Author

6.2.1 The spatial

The blue is more related to the drainage pattern which occurs owing to the sloped morphology of the landscape. Shillong is a region which receives a fair amount of rainfall (approximately 2m - 2.5m of rainfall annually). Unfortunately this opportunity to capture rainwater is not being capitalized for the benefit of recharging or storing this water. Therefore this technique has various sand filters which are located along the various landings in order to filter and clean rainwater flowing along these drainage systems. This method will be explained in further detail in the technical aspects section.

The green networks serves to bring back some trees and green areas into the city. Shillong city also had a lot more green areas in the city in the past but owing to the uncontrolled urbanization process most of the green areas in the city were lost. The green would also provide a more pleasurable experience for the user moving through the space. As highlighted in the analysis chapter as well, most of the people highlighted the Muslim cemetery pathway as one of the more important paths they took which can also be attributed to the fact that that pathway was a corridor through green trees on either side with no built structures. The green reflects as a positive element on the imageability of these streets.

The pathways are made more porous to allow more percolation of water through the surface. It is also made of green pavers all throughout the pathways, such that the language of the street character is made easier to read. This contributes to the legibility of the streets as they become clear lines of movement through the neighbourhood. It also contributes to the imageability of the street as a space more for the public use.

The amenities which are present serve as gathering spaces for the people and help to induce chance encounters among the residents. The clubbing together of the different activities helps animate these places at different times of the day. For example most of the public taps would be used in the mornings when people would conduct their domestic activities and in the evenings when the amenities shops would open these would serve as gathering spaces for people coming home from work.

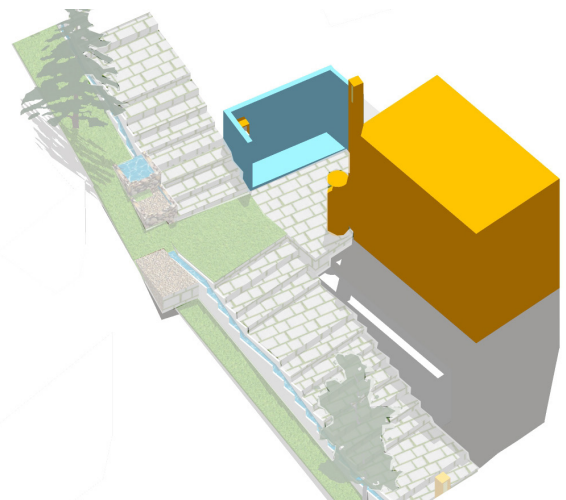
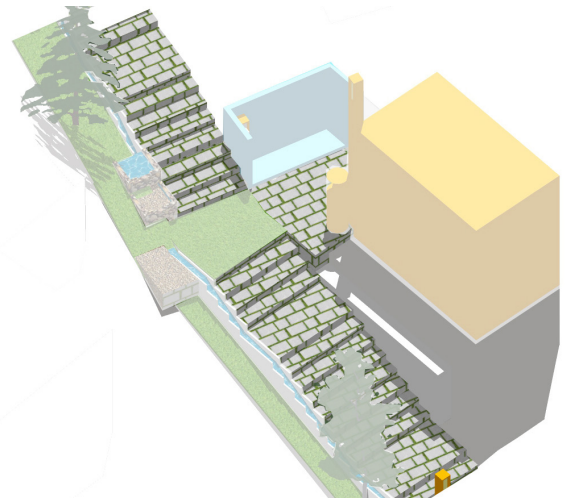
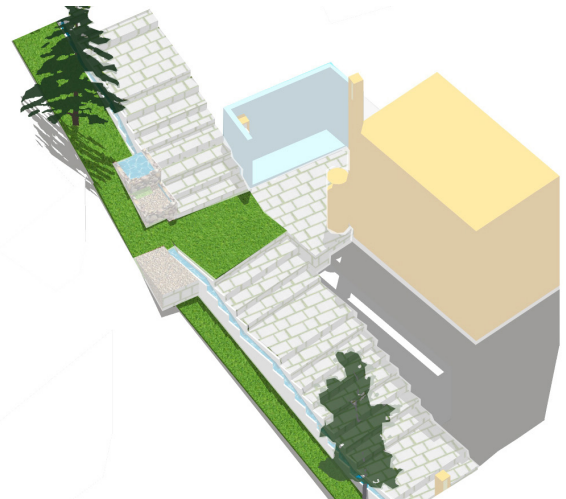
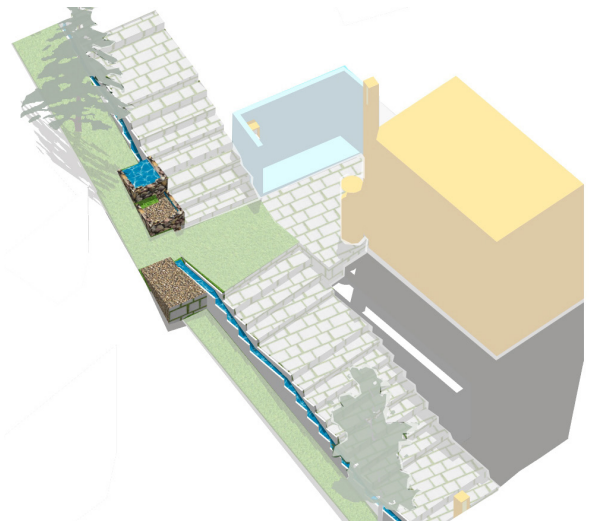


Illustration 115 : Different layers of spatial characteristics
Source: Author

The drainage consists of various stop-page points where the water percolates through and is filtered through a sand and charcoal filter to clean it to be used for domestic non potable purposes such as gardening and cleaning. These surface drains collect only the rain water from the roofs of the buildings and from the streets.

The green areas alternate between the right and the left hand side of the pathways following the water course. This is done so that their vision is unhindered as one moves through the pathways.

Attention is kept to locate the amenities such as the taps and local shops at locations where they will be in proximity to either the vehicular roads and be easily accessible through both movement pathways, that is along the contour and perpendicular the contour

These pathways now have all the systems in place for a more vibrant street character. It is made up of layers of physical elements such as green spaces and sound of water flowing through the surface drains, as well as the mental aspects such as social spaces next to the local water taps and amenities shops.

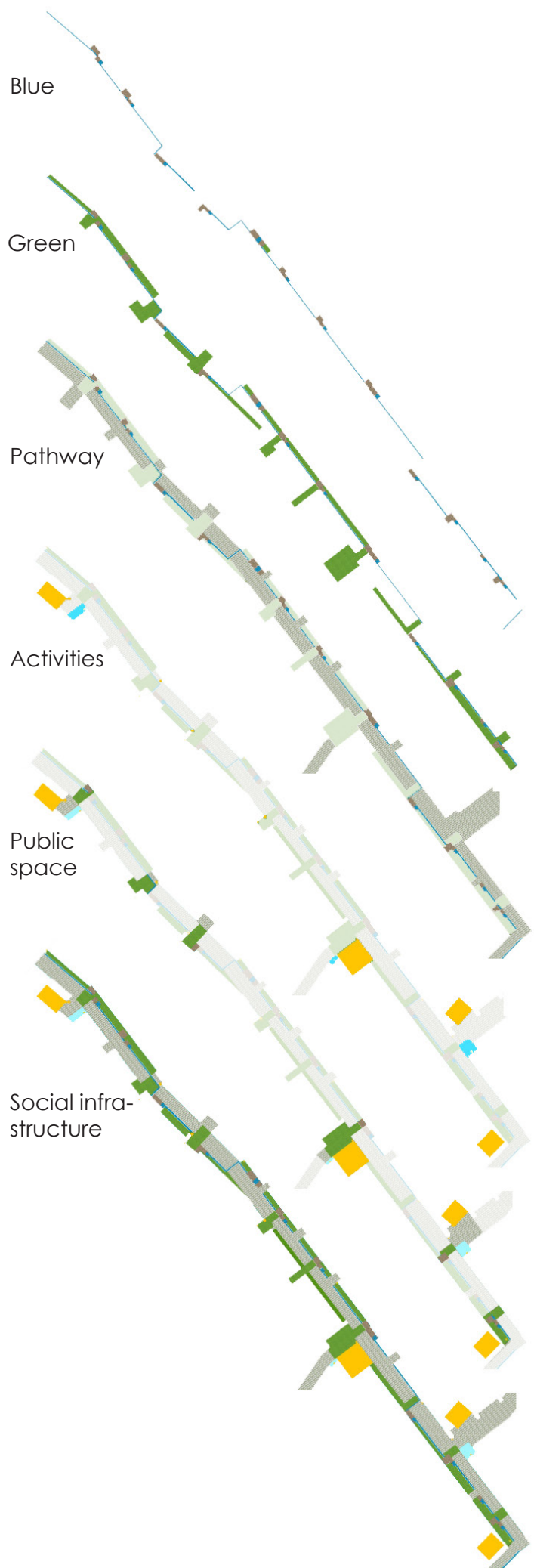


Illustration 1 16 : Spatial characteristics on the pedestrian streets
Source: Author

Trees on alternating sides

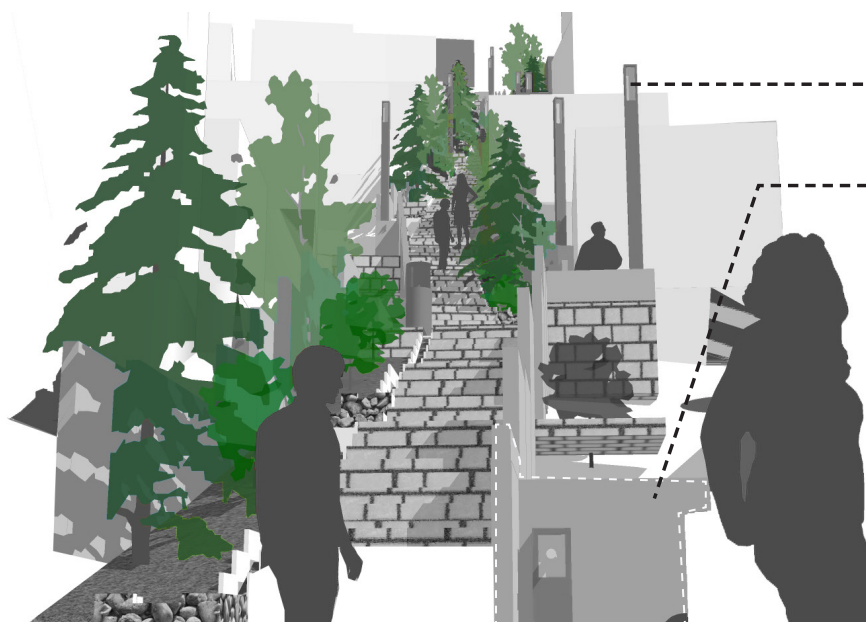
The green is positioned at alternating positions of the pathway so there is no obstruction to the views along the pathway.



The presence of street shops and local taps improves on the diversity and the vitality of the streets

Illustration 117 : Trees on alternating sides along with amenities shop

Source: Author



Lighting

The pause points are usually at local water points which have a seating area around the landing as well

Illustration 118 : The trees and the lighting alternate between right and left side of the pathways

Source: Author

Alternating between the left and right hand side of the pathways

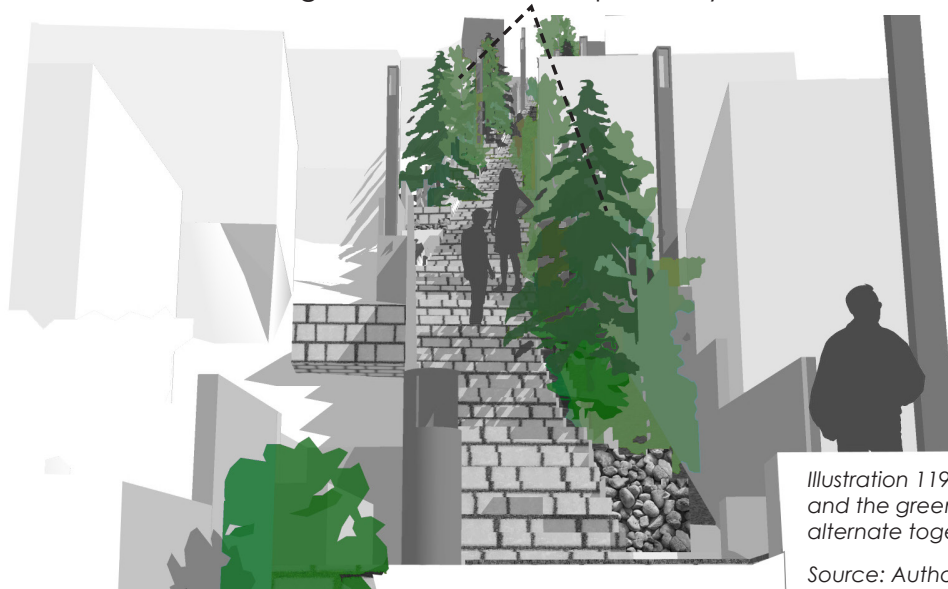


Illustration 119 : The blue and the green networks alternate together

Source: Author

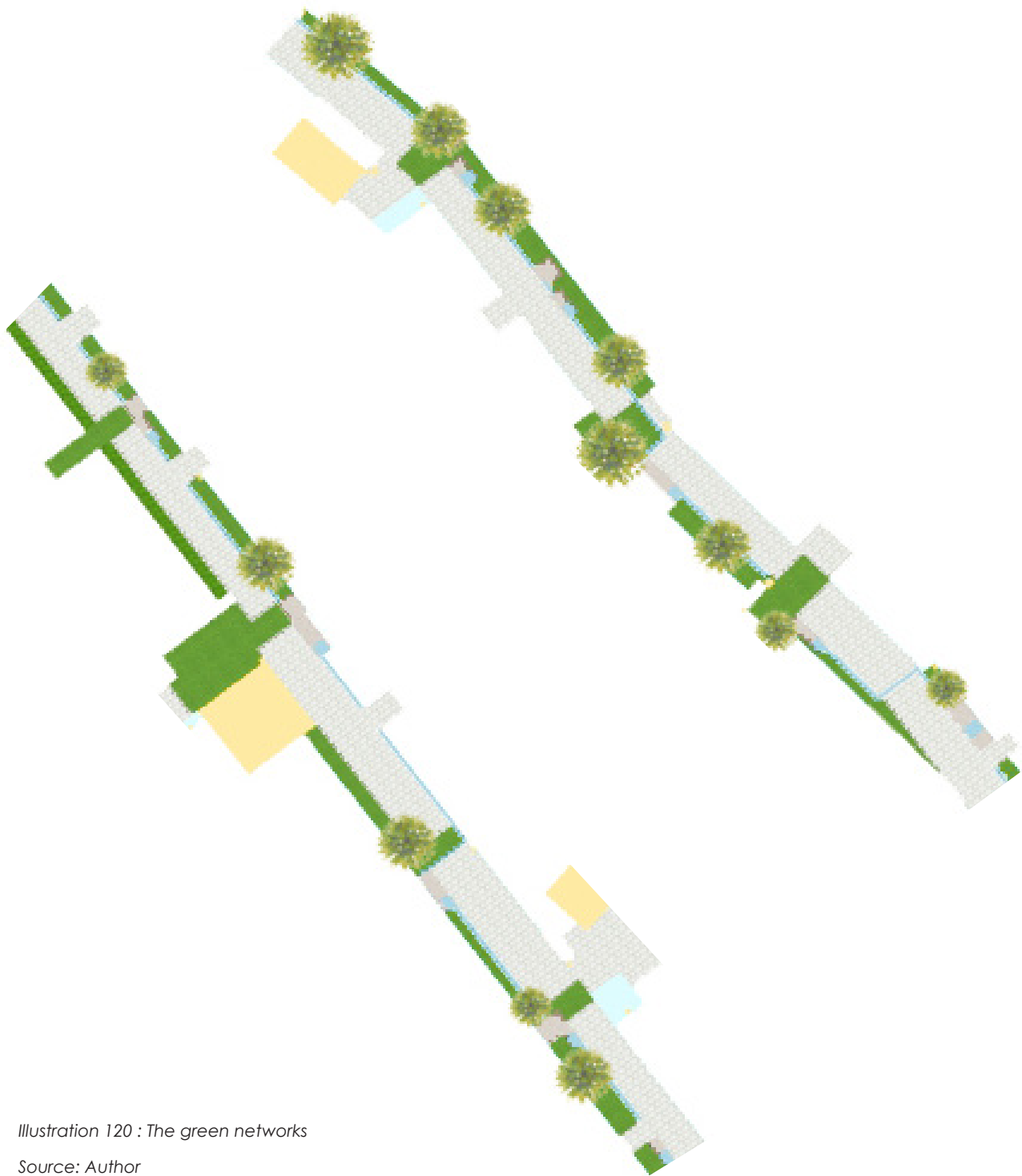


Illustration 120 : The green networks

Source: Author

The experience of moving through these pedestrian pathways is enhanced by the green along these informal paths. As described in chapter 4, the British once referred to Shillong as the “Scotland of the East”. This is because of the rolling green hills and the pine trees reminded them of the Scottish highlands. Hence the introduction of the green is quite important to the imageability of the city.

The alternating sequence is done intentionally to mediate on the amount of space taken on each

side of the pathways (Illustration 120). The green areas are also extended over some of the landing spaces. This also sits well with the new material proposed for the pedestrian pathways which are made with stone blocks with green grass growing through which allows for water percolation into the soil as well. The stone is also indigenous to the location. It is made up of cherra stone which is a greyish type of granite stone and has always been used in the village areas of the state of Meghalaya.

6.2.2 The technical

The state of Meghalaya, in which Shillong lies in, when translated into english means "the abode of the clouds". This is due to the fact that this region in India is known to receive huge amounts of rainwater during the rainy season. One of the wettest place on Earth (Mawsynram) which receives approximately 11m-12m of rain per year lies in this region. Shillong itself receives atleast

drainage systems to capture the rainwater to re-use it or atleast to recharge the ground water.

The rain water flows along the water channels and is collected at various points along the slope of the stepped streets.

Using these pathways in this ways can also con-



Filtration points

Illustration 121 : Spatial quality of the pathways

Source: Author

2m to 2.5m of rain annually. Unfortunately most of the potentials of this rain water is not taken advantage of and almost all of this water goes back into the various streams and drains. This is a missed opportunity for the region.

tribute to incentives which promote the creation of more pedestrian paths since they would help in the future when more demand for water would be required.

Here we try to use the water channels and the

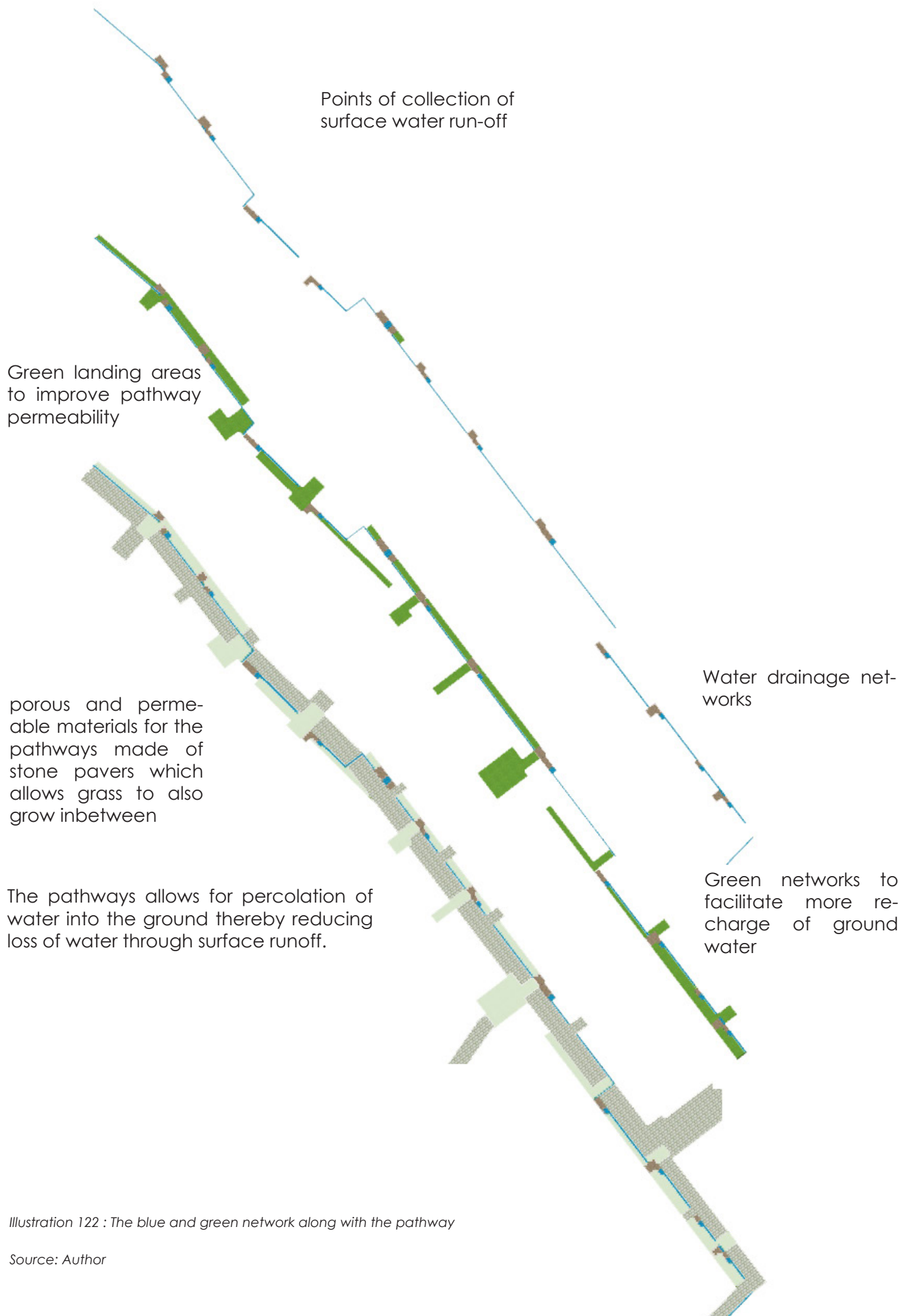


Illustration 122 : The blue and green network along with the pathway

Source: Author

The system for water filtration

These filters are composed of layers of sand gravel and charcoal which is meant to filter out any small bugs or organism, zooplankton, suspended dirt and any other large particles in the water. The water filtered from this process may not necessarily be used as potable water for consumption but can be used for other domestic purposes such as cleaning and watering the green on these informal streets.

To ensure that this water is clean enough for domestic use only the rain water from roofs and streets surfaces are directed to the surface drains to collect the water. The rest of the household waste goes into a different sewer system. This is important so that we can ensure whatever water is collected after the filtration processes can be used for gardening purposes or cleaning purposes.

The standard size and depth of these filters is 1,2 length x 1,5 breadth x 2,4m depth. The top layer is filled with a layer of gravel, then 5-7 cm of sand then another 60-90cm of 15mm size gravel

and lastly 1.2m of charcoal. The water cleaned from these filters can either be collected into underground storage tanks or can also be left to recharge the underground water again.

Thus, in this way the function of these informal pathways goes beyond just serving as a movement corridor and social urban public realm but it serves as a technical infrastructure as well consisting of these blue networks to clean rainwater.

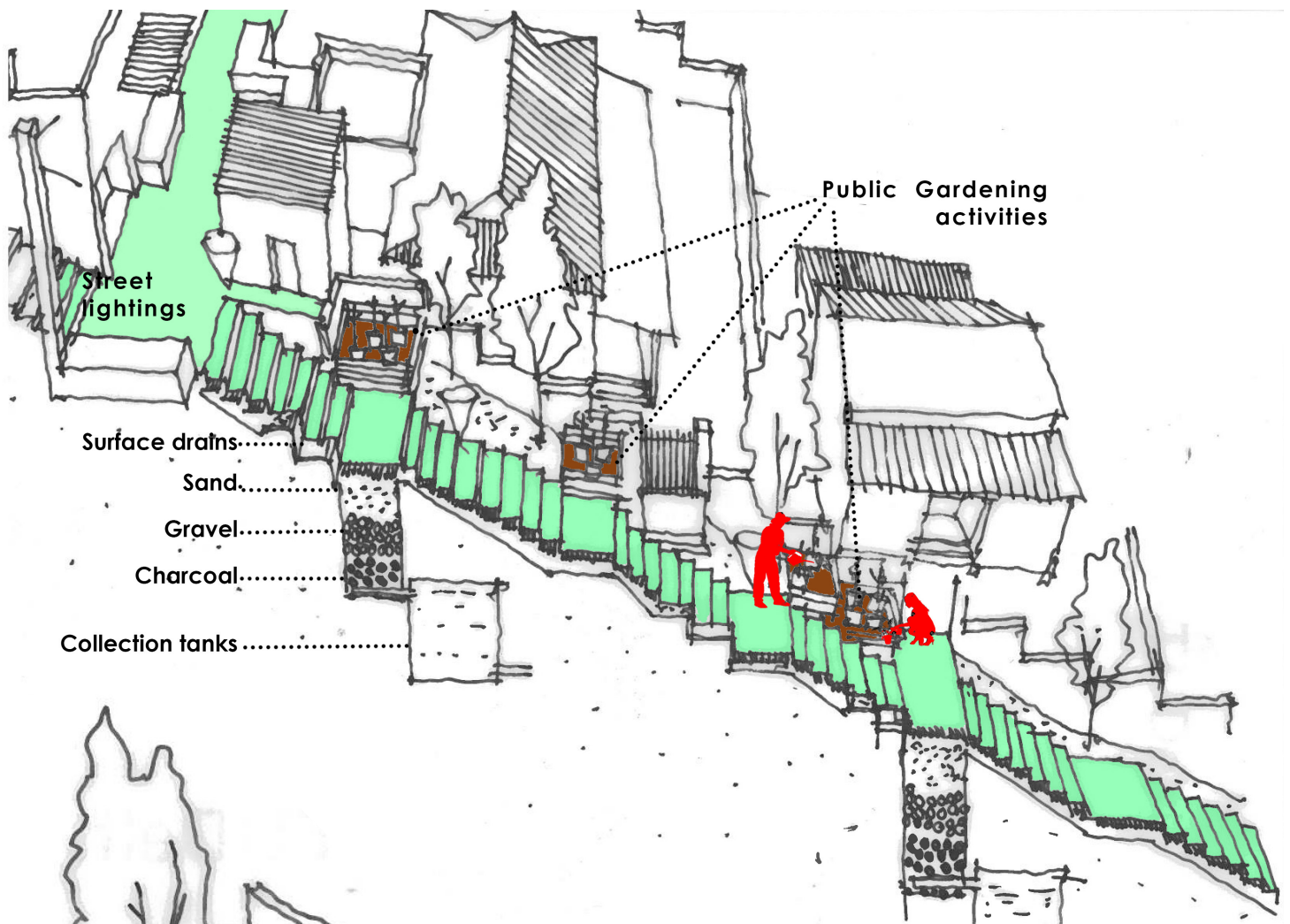


Illustration 123 : Section of the drainage system

Source: Author

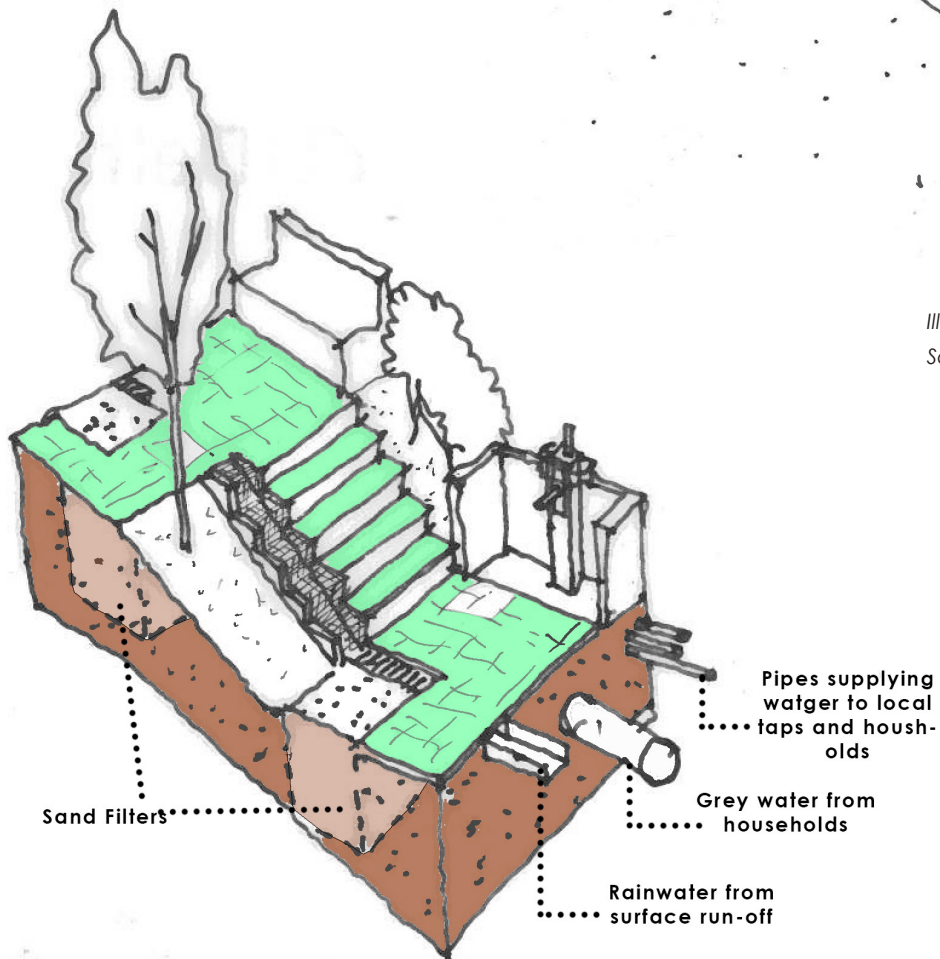


Illustration 124 : Typical detail for a section of the informal pathway

Source: Author

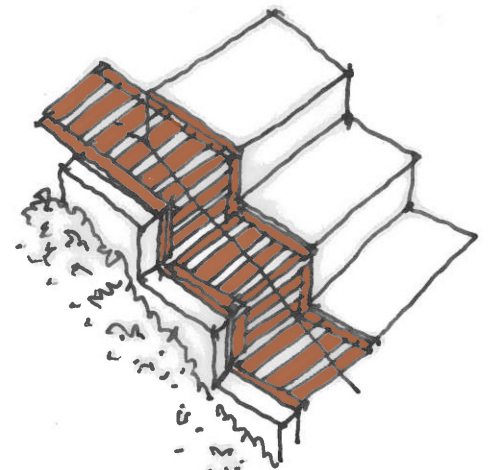


Illustration 125 : Drainage cover detailing

Source: Author

6.2.3 The social

These stepped streets would consist of the various activities mentioned in the previous analysis chapter which reveals the most important attributes contributing to vitality and diversity in the public realm.

The different activities are described in detail in the following sections. This picture (Illustration 126) shows the various activities which can happen on the informal pathways of the stepped streets. They are formed by creating small hubs of activities along the pedestrian street. By building on what was learnt from the analysis chapter on the types of activities which happen in this locality we are able to focus on certain activities which need to be either revived, enhanced or added to improve the quality of the street life.

These activities include the public taps, the local amenity shops, the food and street vendors and the pathways themselves as the medium/platform for social interactions. These various aspects will now be discussed in the coming sections.

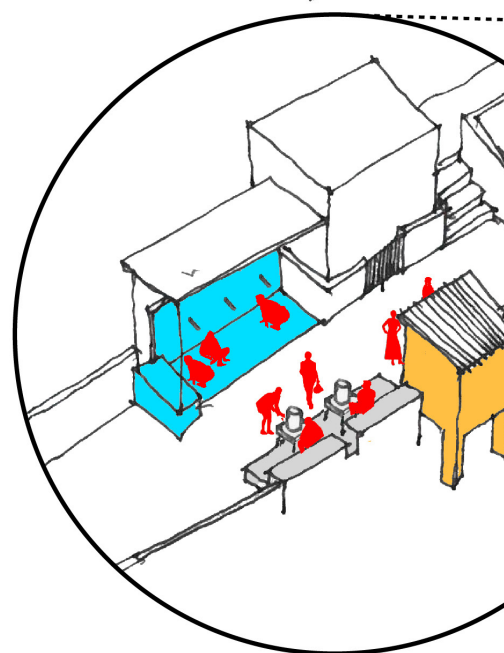
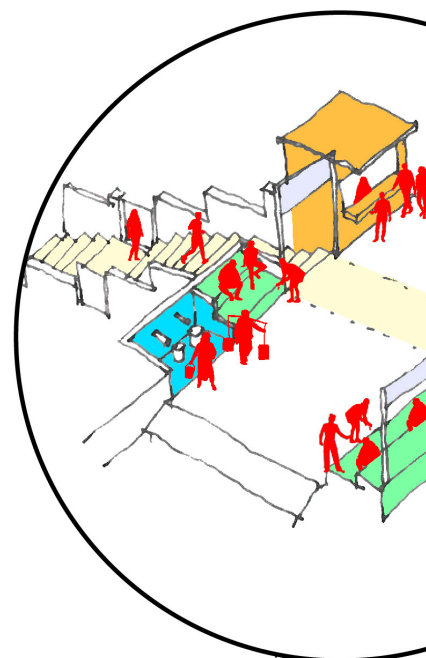
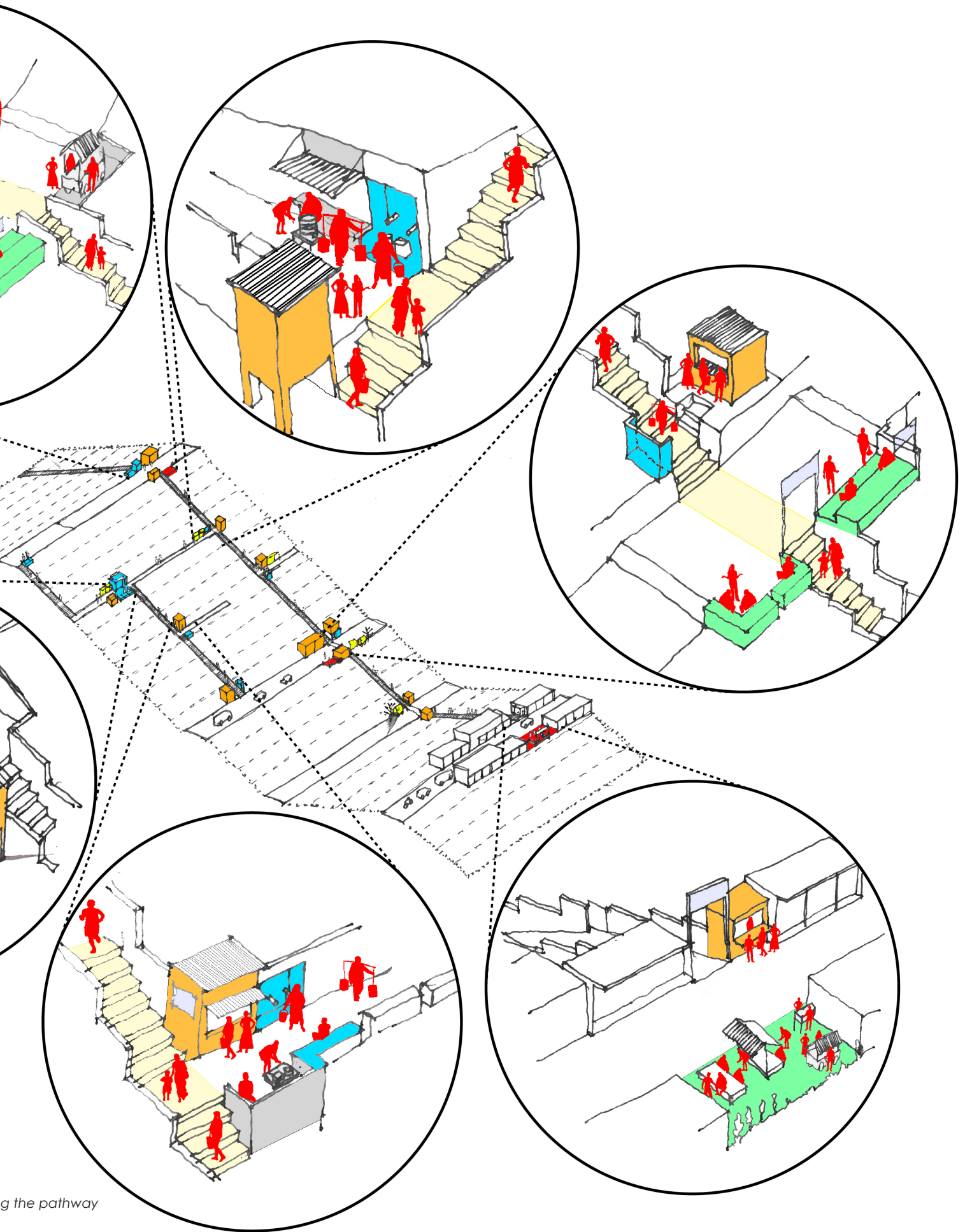


Illustration 126 : Different activities which occur at the various hubs along
Source: Author



6.2.3.1 Ammenities shops

These local shops would be located along these pedestrian pathways and are located on the intersections of the pedestrian paths which run perpendicular and along the pedestrian paths (Illustration 127). These would facilitate greater visibility along two different movement directions and hence promote their usage by the mere act of location. These ammenities located along the line of the pathways will fulfill the purpose of not only aiding in providing basic necessities to the residents but can also act as rest points along the pathways for people moving across these steps.



Scale



Fine grain economy



Imageability



Landmark



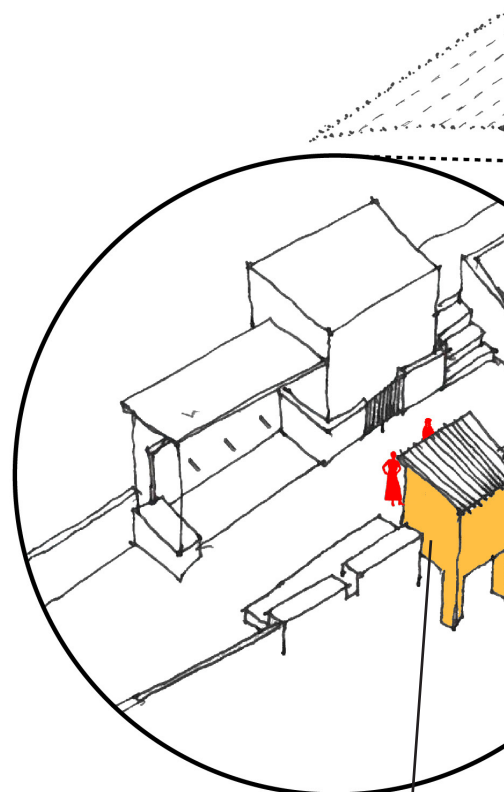
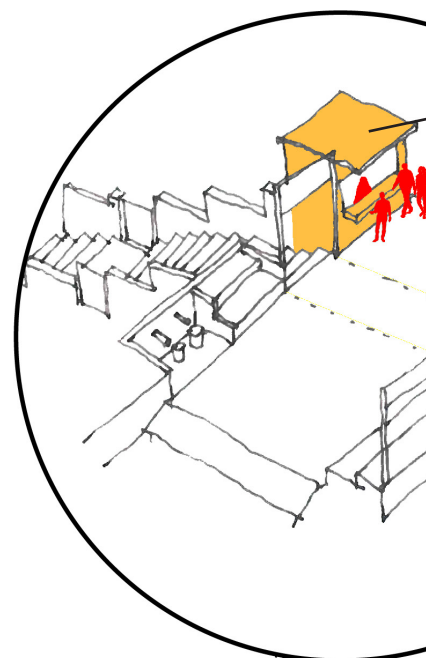
Diversity



Legibility

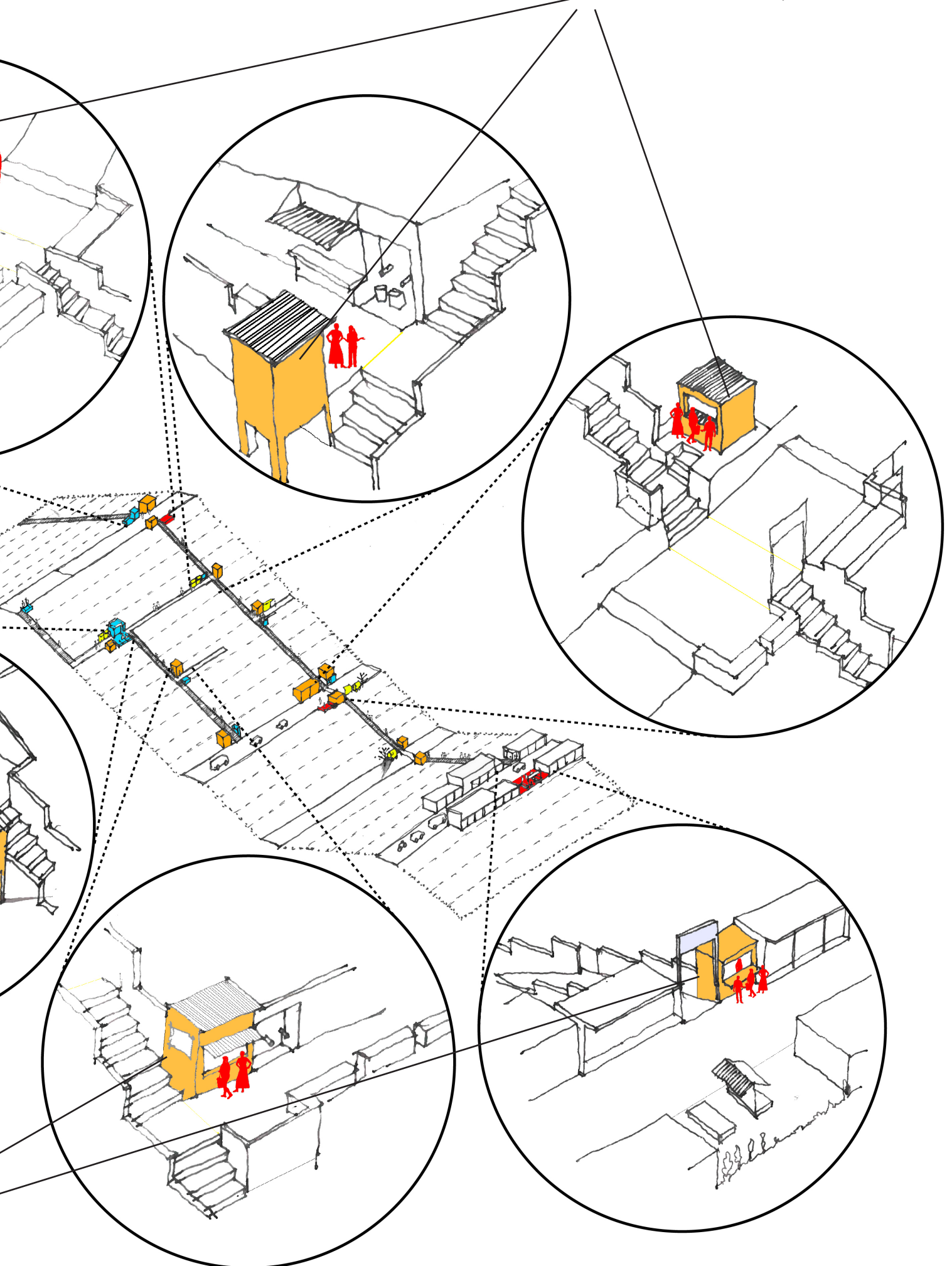


People watching



Local ammenities shops

Local amenities shops



d along the pedestrian spine

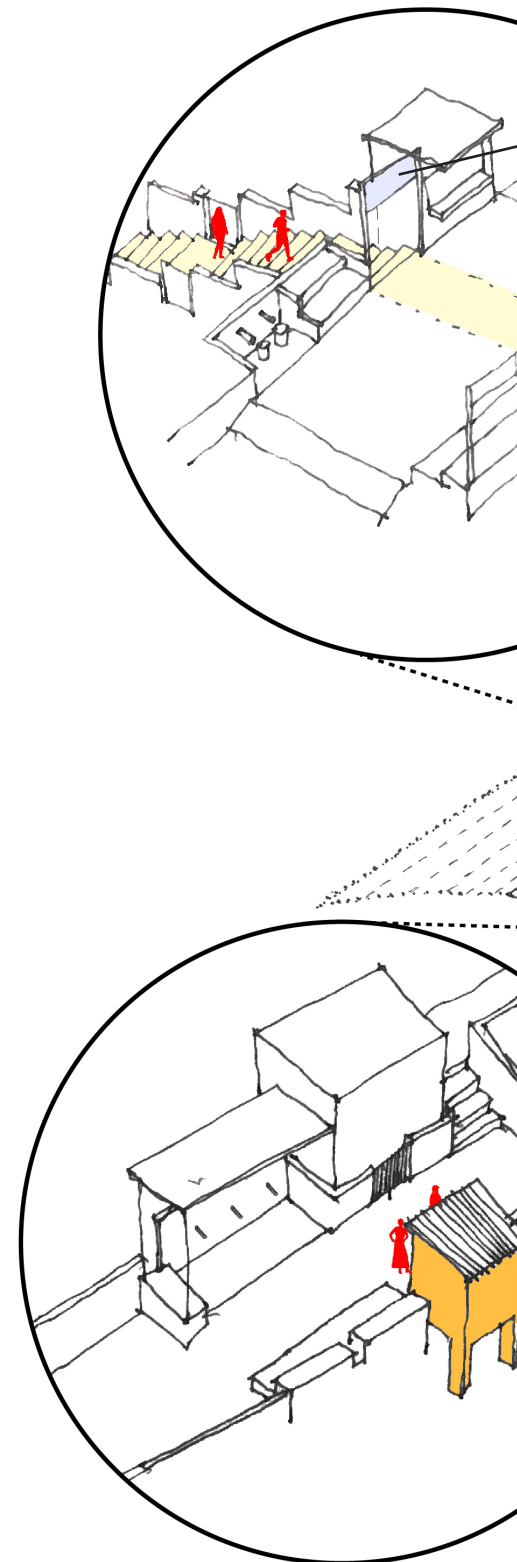
6.2.3.2 The pathways

From the previous chapters we learnt that value to a place is also provided by its physical form and in this sense the narrowness of the streets will aid the residents to fulfill their needs. But there needs to be more done from the form of these pathways than just keeping them the way they are. These can be used as a way of reintroducing the green into the city which has greatly gone under neglect with rapid growth in the city.

These pathways can be enhanced to better suit the activities which will happen or are already coming under way on these areas. The rise of the multi-storeyed building apartments is drawing more tenants to stay in these areas.

These pathways provide the conditions for running and exercise during the early morning hours of the day. The steps will have to be made more suitable for walking and running in this case by avoiding unevenness in the treads of the steps. Hence, although their widths will remain the same the material on these tracks will have to be replaced for more pedestrian friendly movement.

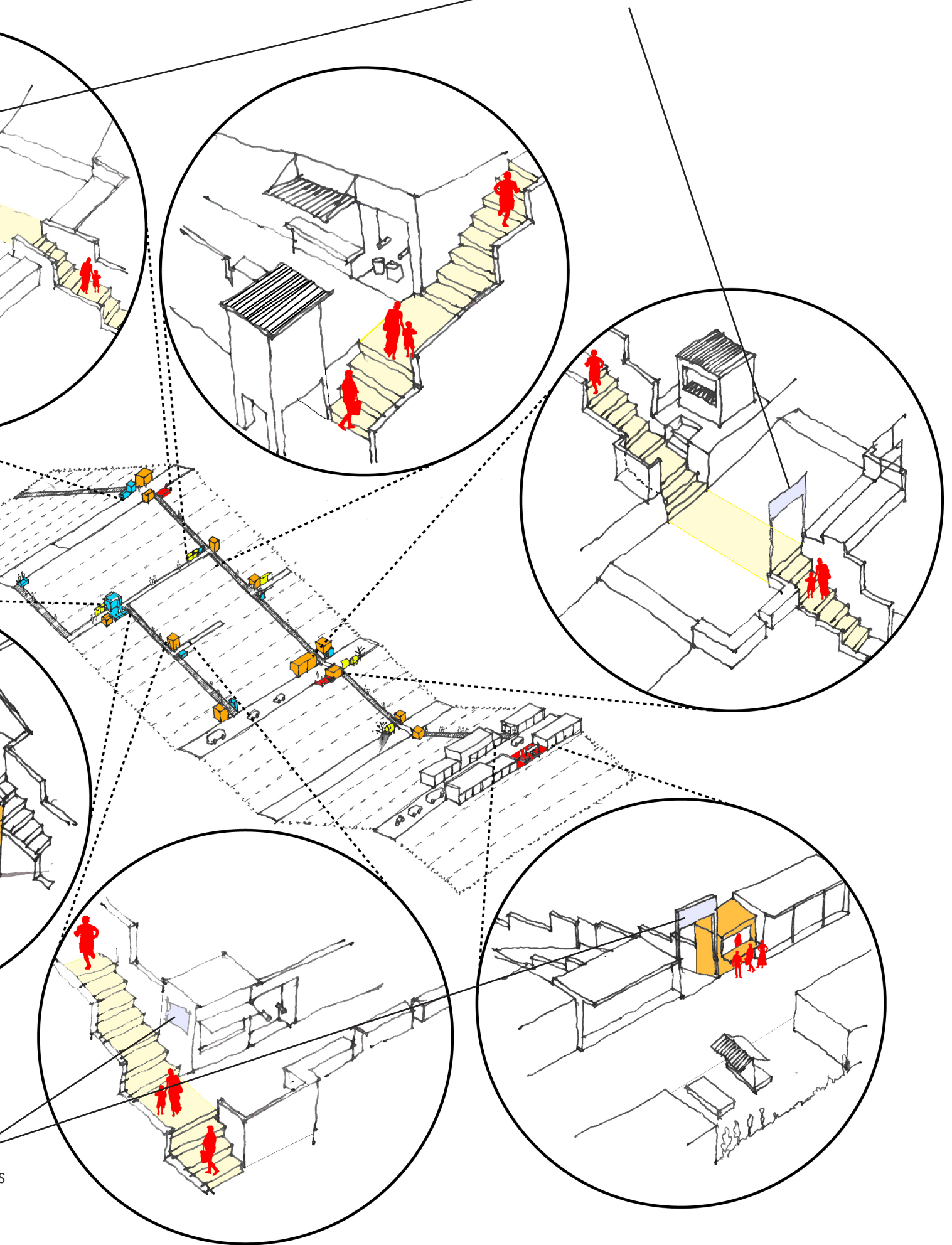
Signages introduced along the paths will also help people recognise which locality they are heading towards (Illustration 128).



Pedestrian pathway with street signages

Illustration 128 : Pedestrian paths with street signages
Source: Author

Pedestrian pathways
with street signages

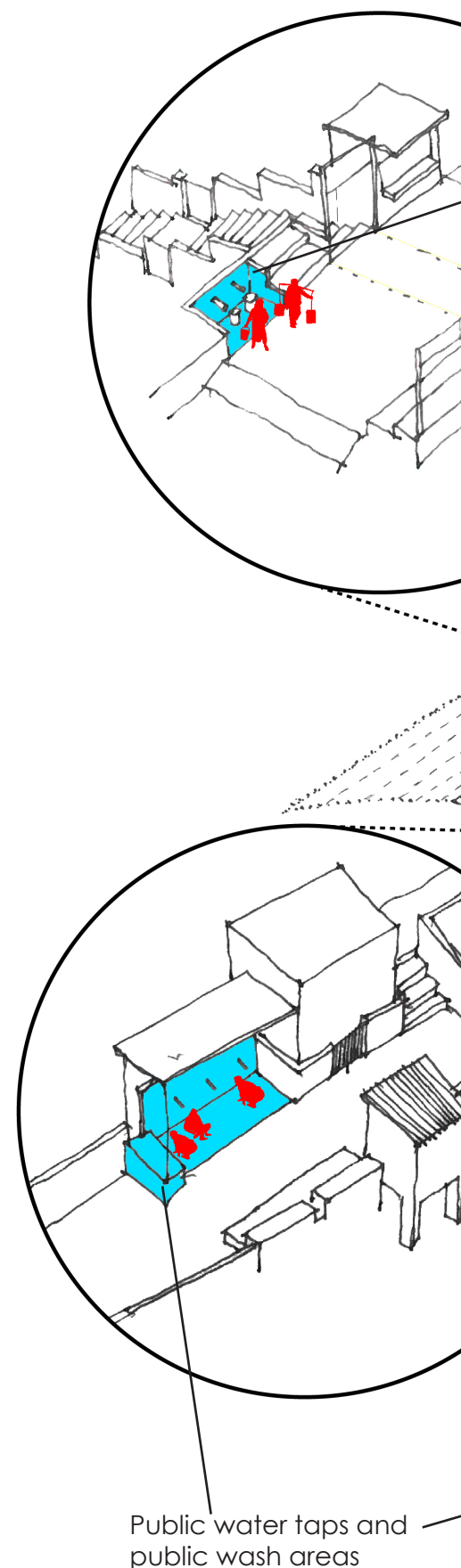


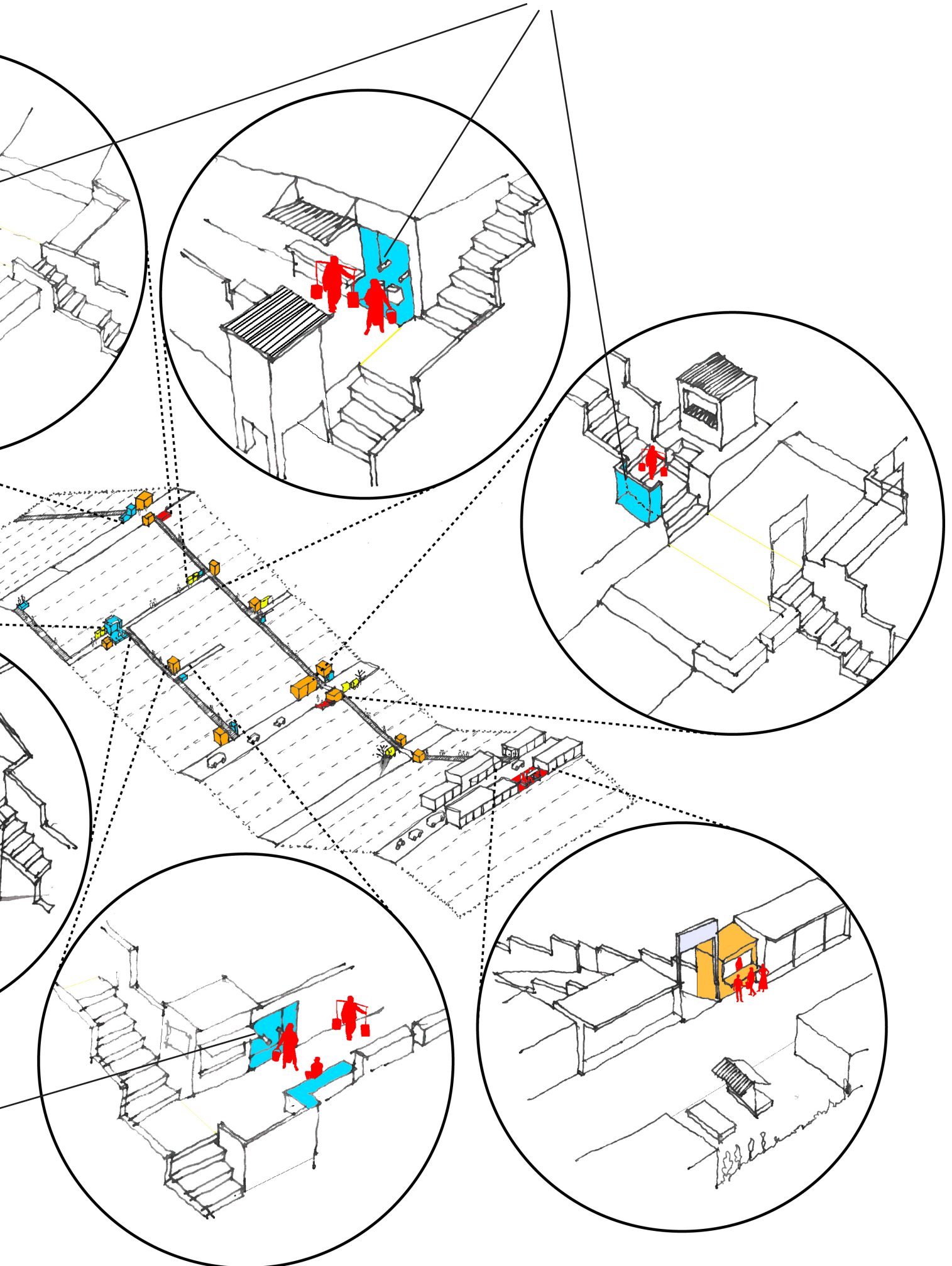
6.2.3.3 The local water taps

These local water taps are very important in the imageability of these pedestrian pathways. People use these for their domestic purposes but also with time they are able to use them as drinking water points as well. This would be very useful for people in their early morning walks. Presence of seating areas near these local taps would be very helpful in providing a seating area for people waiting to collect water but also create an atmosphere of engagement between the neighbours.

As was shown in the previous section the values related to meaning are predominantly reflected through the historical aspects. The more a place has a history and a story behind it the stronger its imageability and legibility. This will then enforce meaning.

These public taps were used in the past by the residents but as a result of their discontinuation the pathways have started to fall under neglect. The revival of these taps will ensure that the value associated to water sources as areas of social interactions will continue on.





6.2.3.4 Local food shops

As discussed previously the values we take from the activities are the presence of diverse usage during different times of the day. This adds to the vitality of the place as well as promotes eyes on the street.

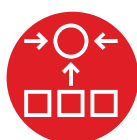
These local food shops open during the evening hours of the day and will bring a more vibrant street quality during the evenings. As was already explained in the previous sections the local food joints are some of the most imageable aspects of the urban environment in the mental maps drawn by most of the respondents. Hence, the presence of spaces which would allow for these activities to happen would contribute immensely to the imageability of the informal pathways (Illustration 130).



Scale



People
watching



Distinctiveness



Landmark



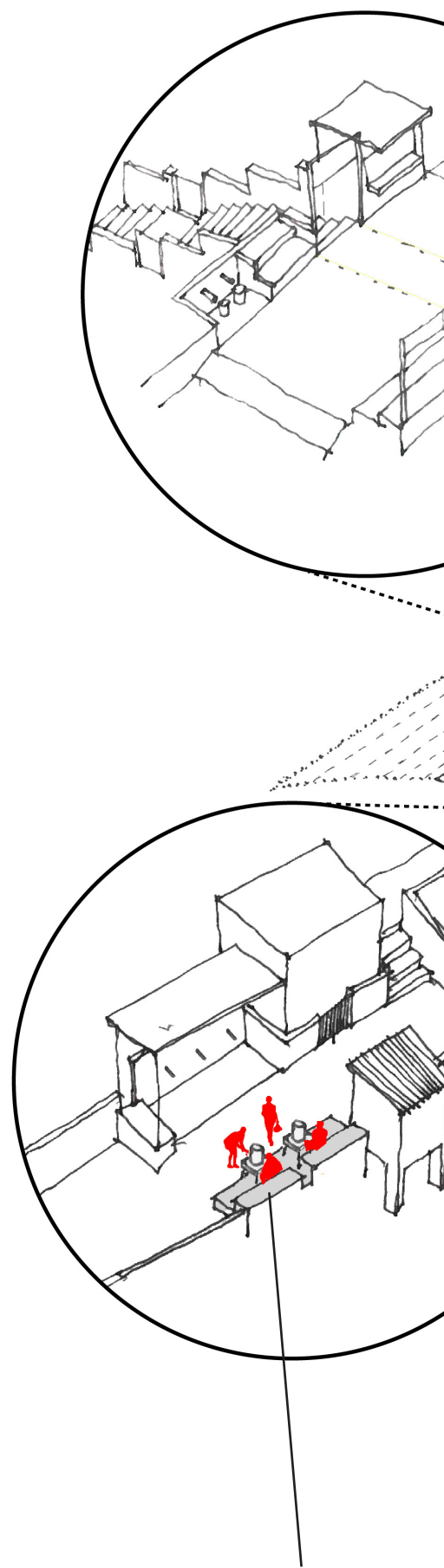
Diversity



Imageability

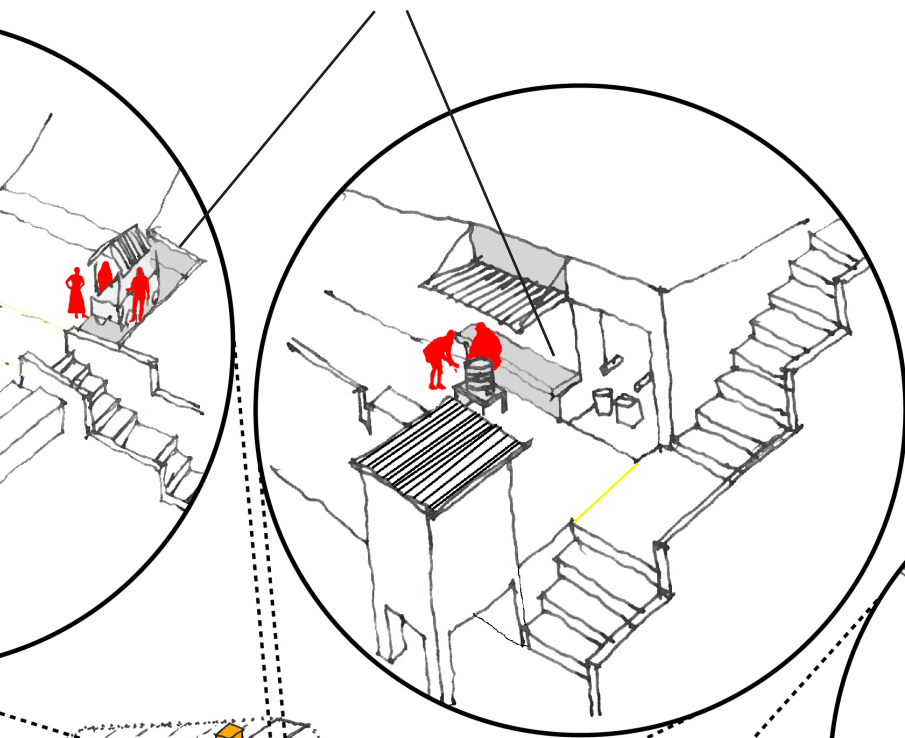


Street
activity

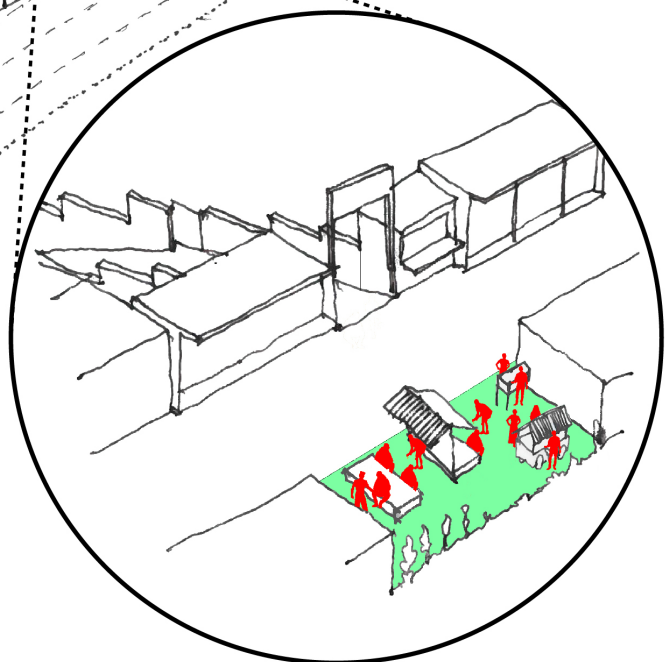
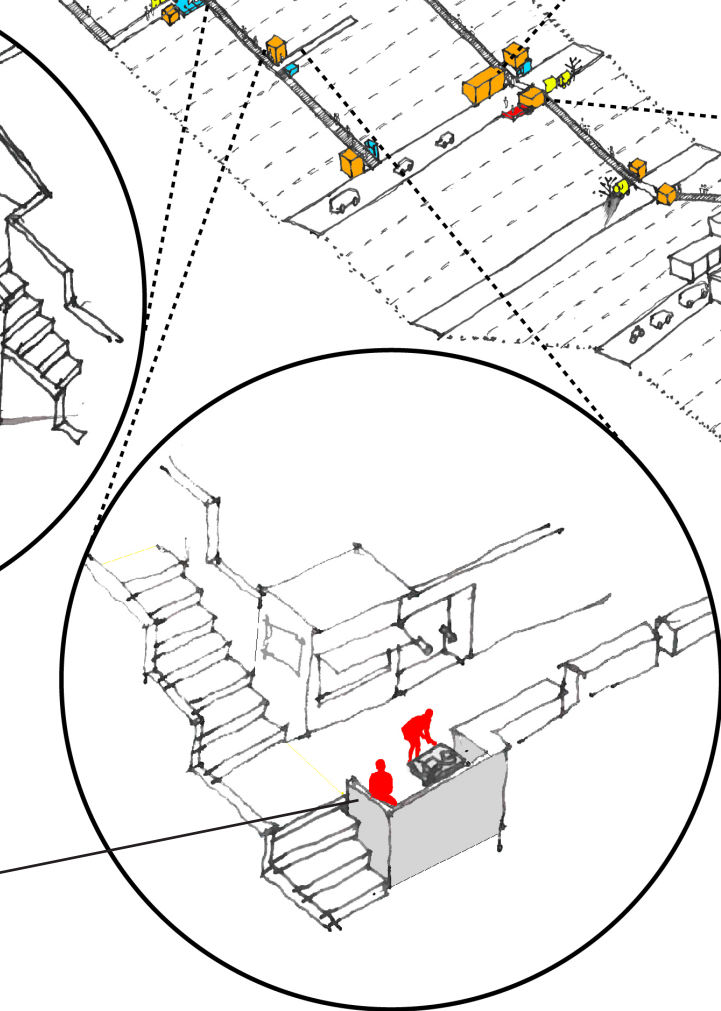
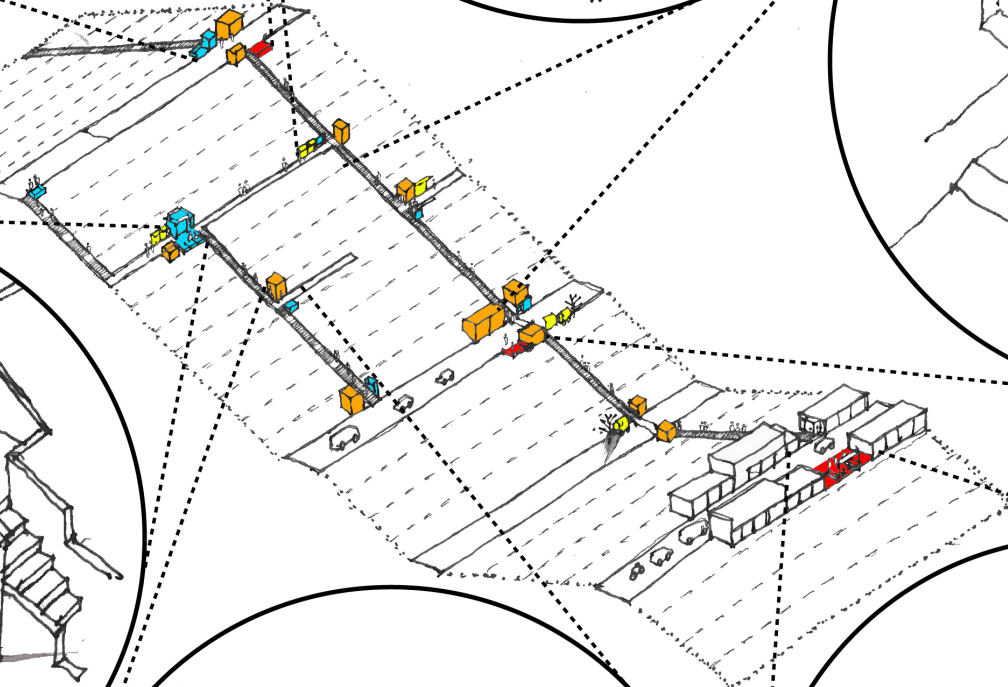
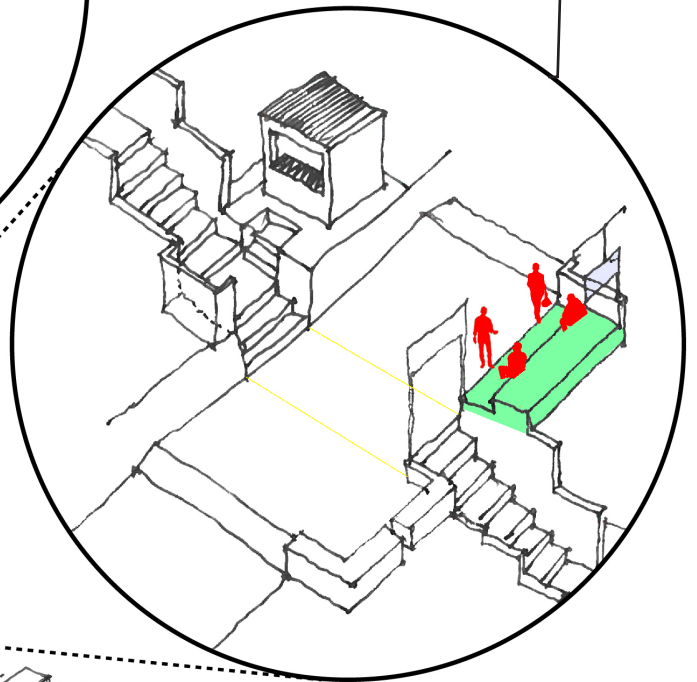


Street food vendors

Street food vendors



Vendors selling their local produce
(Vegetables and fruit vendors)



6.2.3.5 Late evening usage

As already mentioned the diversity of activities present on these streets facilitates the possibility of chance encounters and interactions among people. The presence of the amenities shops and a larger platform and seating area around these shops would help draw smaller fine grain activities such as the local food shops to set up base next to these areas since these nodes would become the hubs of gathering of people in the late evening hours (Illustration 131).

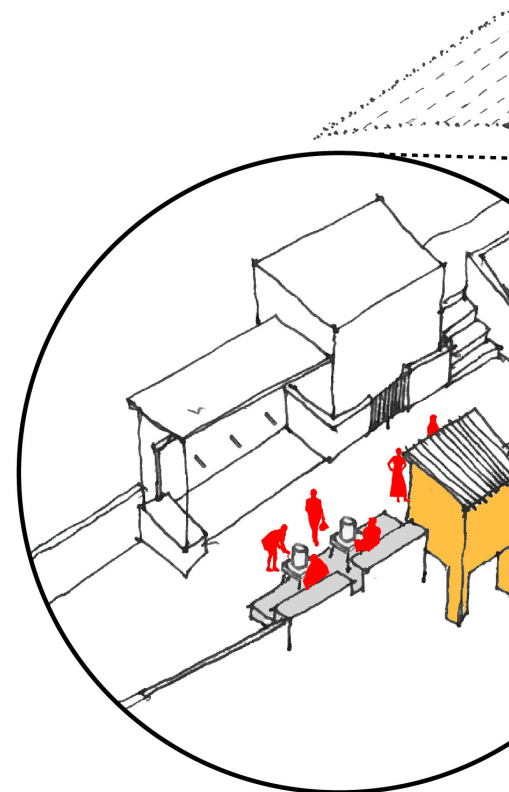
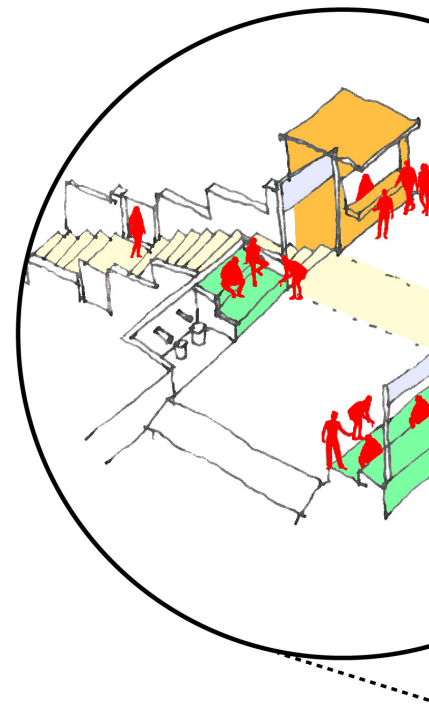
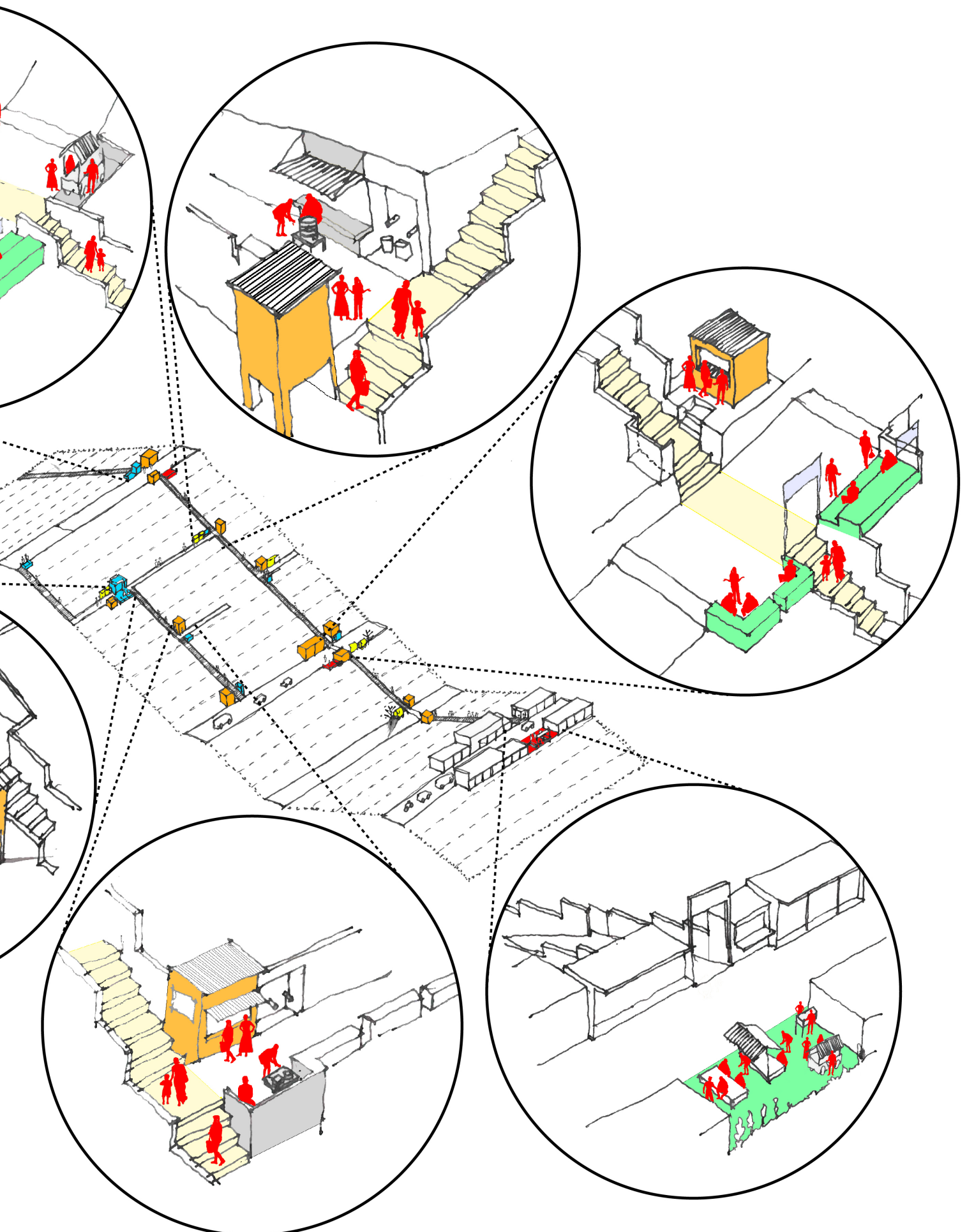


Illustration 131 : Pedestrian paths serve as meeting
Source: Author

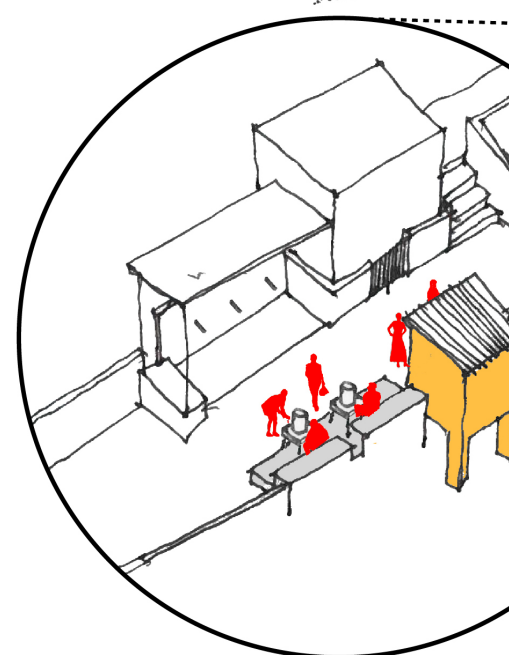
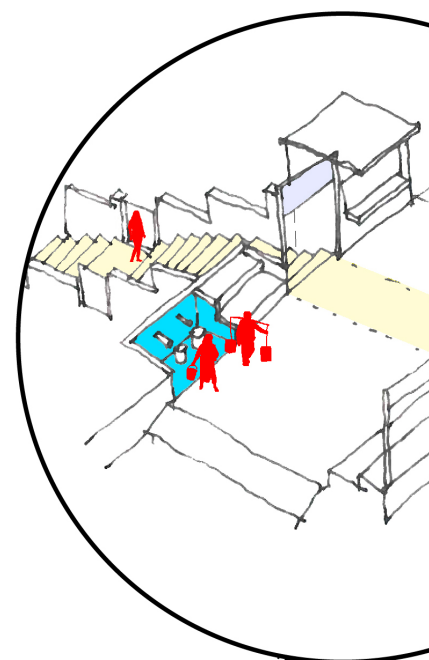


g places for different groups of people during the evenings

6.2.3.6 Early morning usage

The local public water taps would mostly be used during the morning hours around 7:00 am to 8:00 am when most of the people who come back from their early morning walks would be returning home. People who are returning home could use these areas to have water and rest on some of these steps while at the same time interacting with the people who are collecting water. This is what leads to the attachment people have with the streets as pointed out in the theoretical framework in chapter 3 that attachment to a place is linked with people's familiarity with an area. The presence of such locations which facilitate people's needs leads to a stronger level of dependency on them and hence a greater attachment which contributes to imageability and identity.

These streets are now the primary means of movement for the people since it serves their needs of both movement as well as social interactions. Their familiarity with the location is enhanced through activities present on these streets.



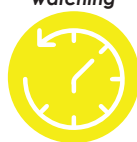
Landmark



People
watching



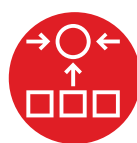
Comfort



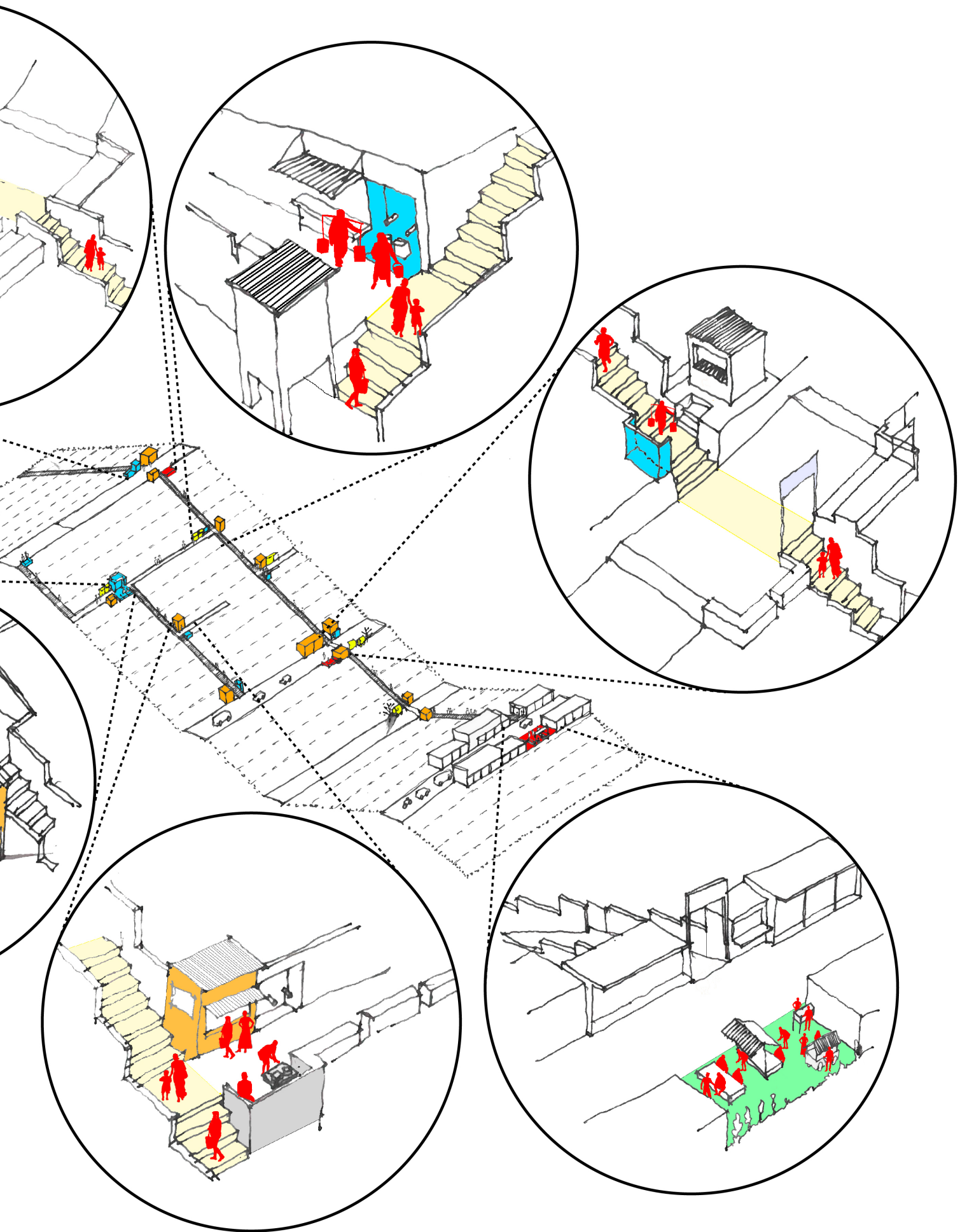
Opening
hours



Imageability



Distinctiveness



6.3 Design impression

Case 1

The before (Illustration 135) and after images shows how the street profile looks like before and after the transformation. The after image shows the profile of the pathways of how they would look like in an environment which favours pedestrian walking over vehicular traffic (Illustration 136). These paths would become the so-

cial spaces where residents could sit and talk to neighbours while engaging in everyday domestic activities.

The location of the first example of the intervention lies along the ridge line and is used as a shortcut for the people from lower Lumparing to the Laban locality (Illustration 133).

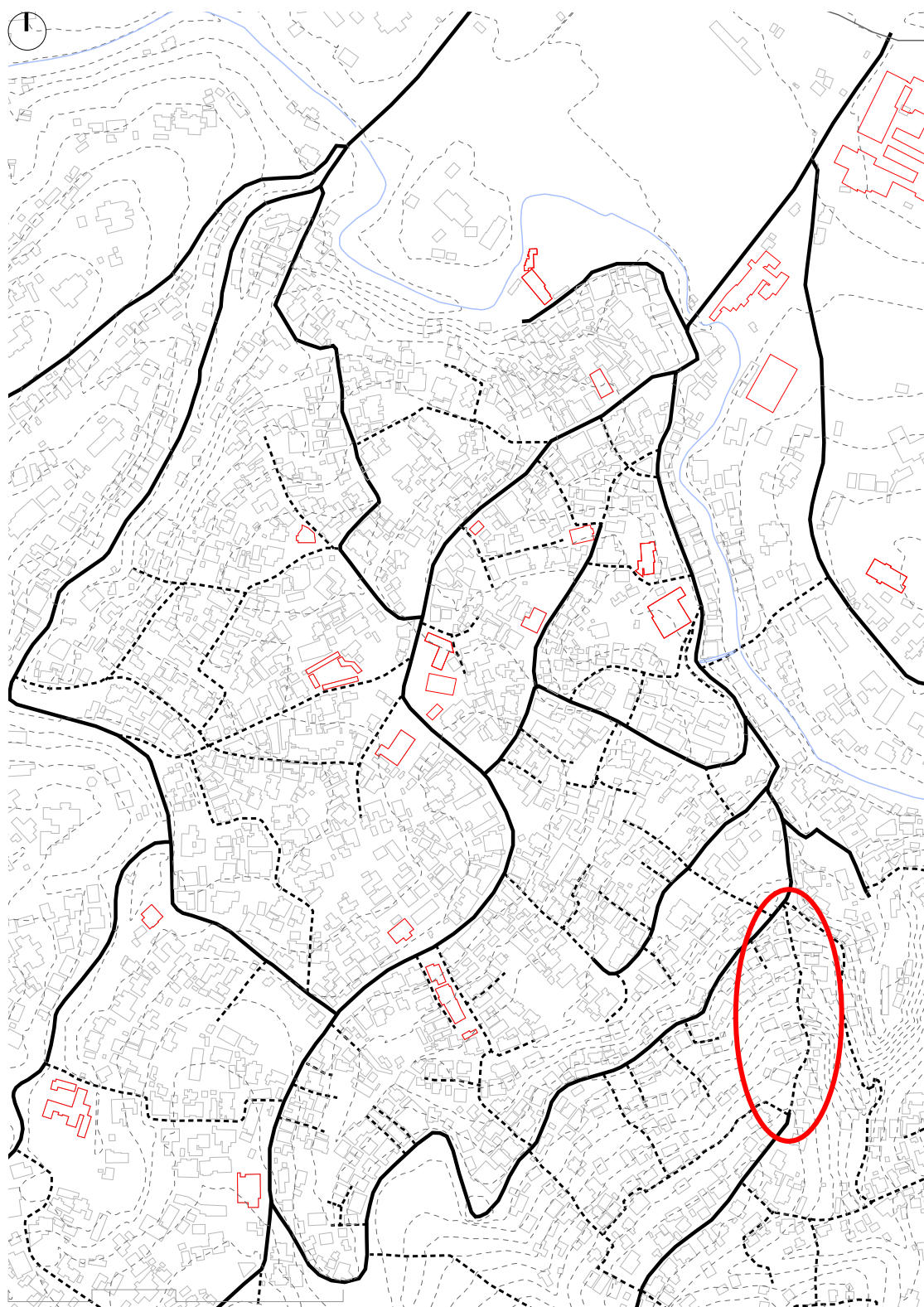


Illustration 133 : Case 1 along the ridge line of the slope

Source: Author

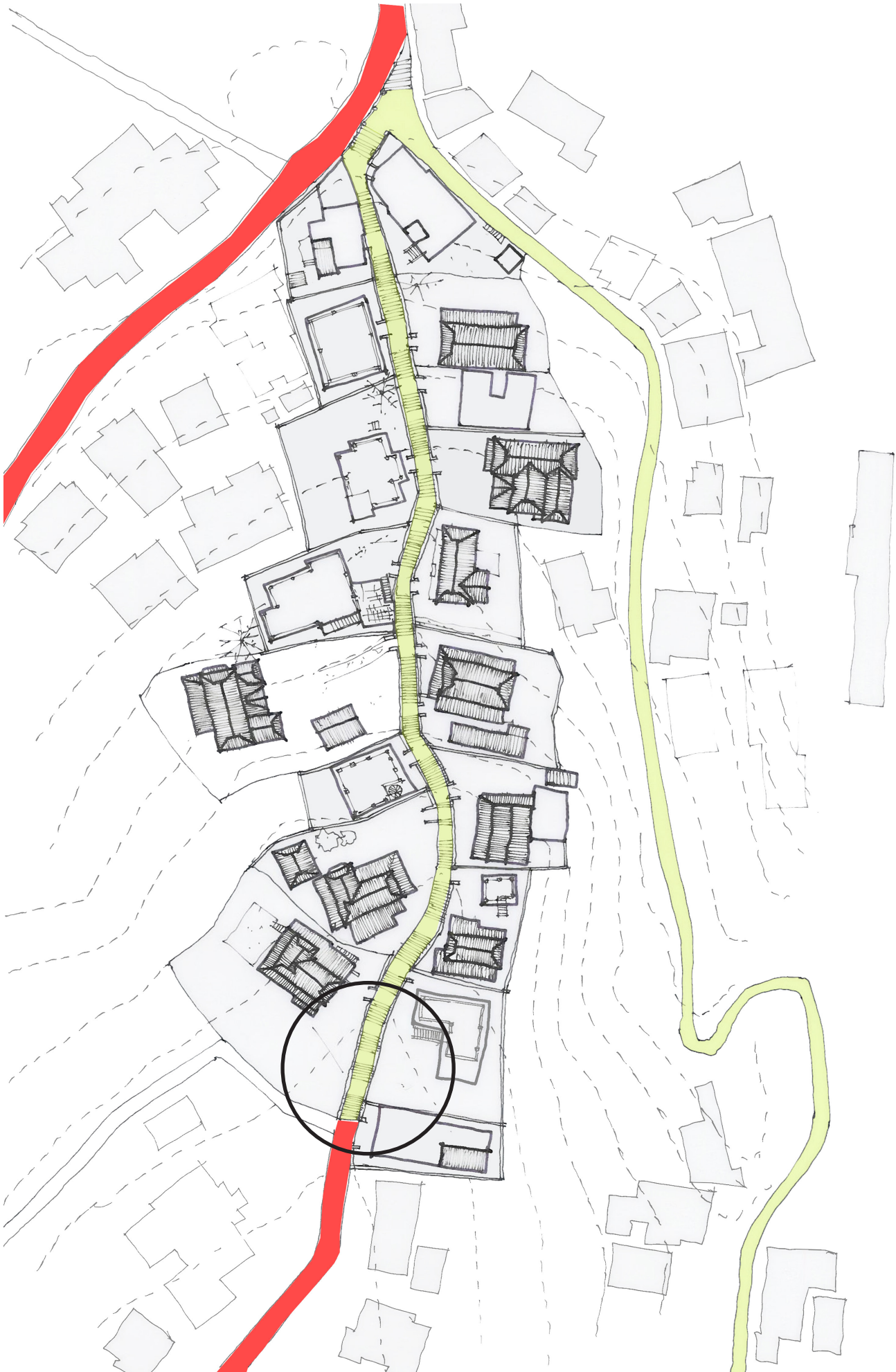
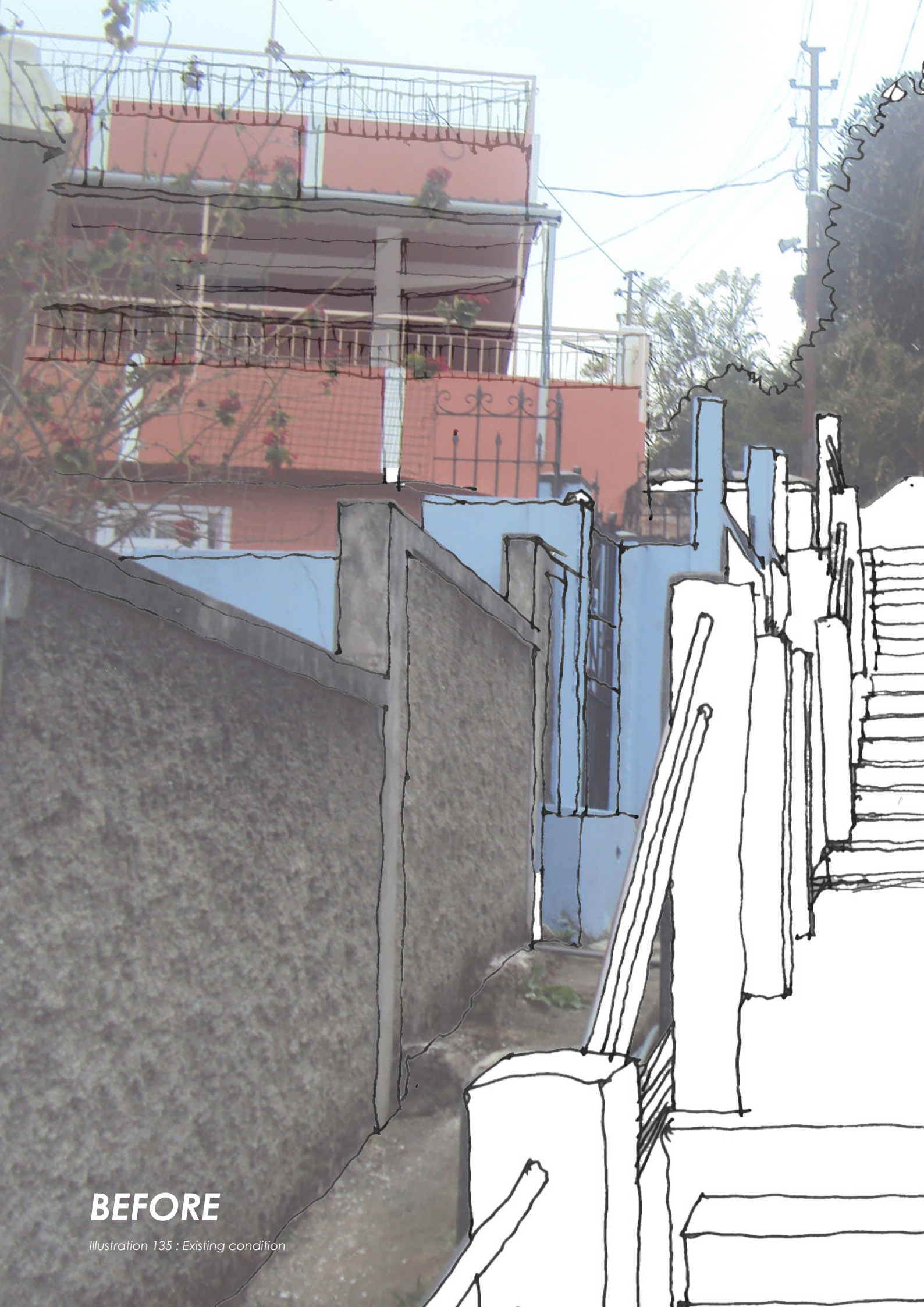


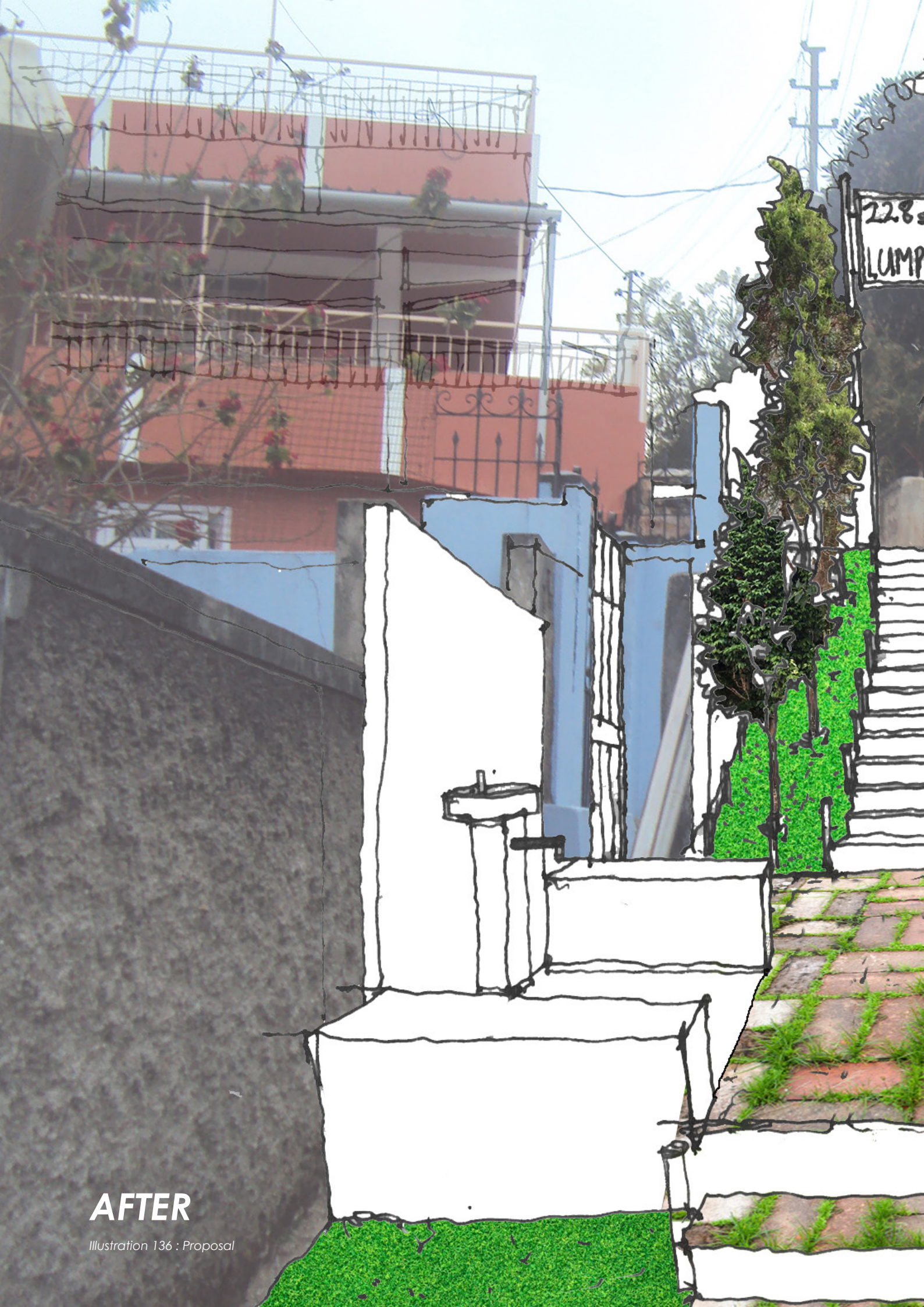
Illustration 134 : Zoom in on intervention area - relation between the vehicular path, informal paths, landform and building plots
Source: Author



BEFORE

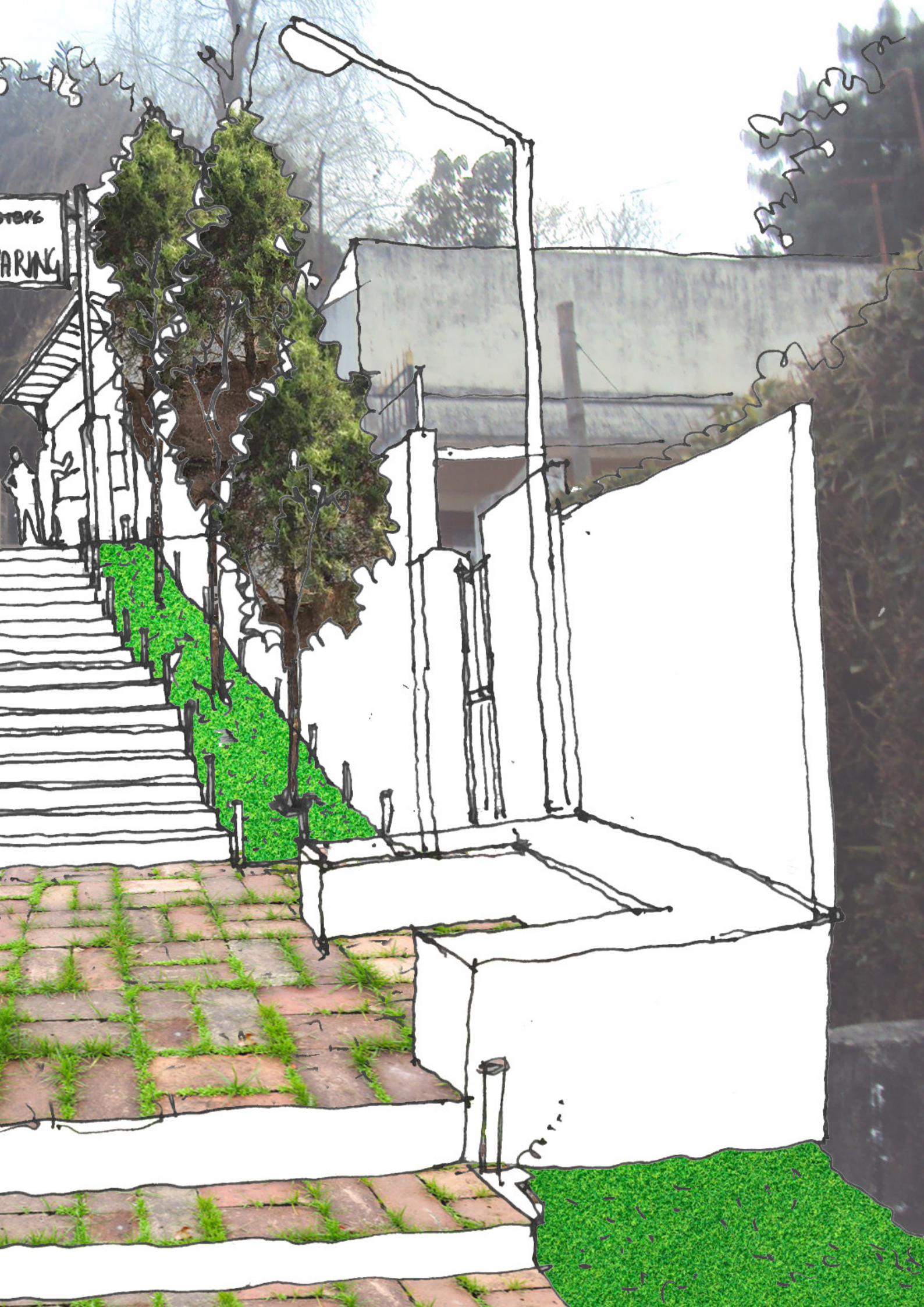
Illustration 135 : Existing condition





AFTER

Illustration 136 : Proposal



Here, we see the pathways are replaced with green pavers in order to allow more permeability of the water. The stone texture also facilitates walking on the streets and is also friendly for early morning joggers and runners. The green curbing is a way of bringing back the green into the city. This could redefine the image associated with Shillong as the new "Scotland of the East".

The public water taps are revamped with the addition of public drinking water at these locations. These facilitate not only the previous activity of water collection from these areas but also acts as water points for runners and joggers. Presence of local tea stalls and amenity shops helps create an atmosphere for interaction and meeting with neighbours and visitors on the streets. The addition of seating in these areas are also helping to provide rest areas for the people collecting water in the early morning hours as well as for the residents who do their runs along these pathways.

The street signages and street lightings installed help add to a more secure and safe street atmosphere. The new image brought about to these

streets is one of not just a movement corridor any longer but one that is styled towards a future where health would become a very important part of urban living and a shift from the use of vehicles to walking as norm.

The technical systems introduced into these pathways gives an opportunity for these paths to be of higher value to the city. With the trends of climate change, availability of water for domestic use will become an even greater issue. These pathways act as the filtration systems to purify the water for domestic use. Owing to the climate of the region the abundance of rainwater is not being utilized to its full potential. The use of these pathways as a means to store and recharge the ground water adds more value to them. The green and blue infrastructure is connected to a more functional value. Since the physical character now carries with it a meaning this will enable the preservation of the built form.



Illustration 137 : Intervention area in the mornings

Source: Author

The image above shows (Illustration 137) the revival of the public water taps along these pedestrian pathways. The activities serve not only the purpose of functionality but also serve to reinforce the bonds people have with the place and the people. This aspect is very much related to the concept of place identity and sense of place where the form and activity of the place gives it its meaning.

One interesting feature of such activities is that they happen mostly in the morning hours. Such places completely change character in the evening hours and become places where small local vendors can set up shop. This multi-personality aspect of these areas gives these small hubs their local character and adds to the sense of place.



Illustration 138 : Intervention area with amenities shops

Source: Author

The local amenities shops provide a wide range of services. Besides just being areas of picking up of local domestic household goods some of these shops usually have tea machines or juice makers and thus serve as areas where people stop and meet their neighbours to chat to have a cup of tea or juice. They become local landmarks and rendezvous points for the local inhabitants. Thus, this shared commonality gives a stronger attachment to places which are valued differently to the different people.

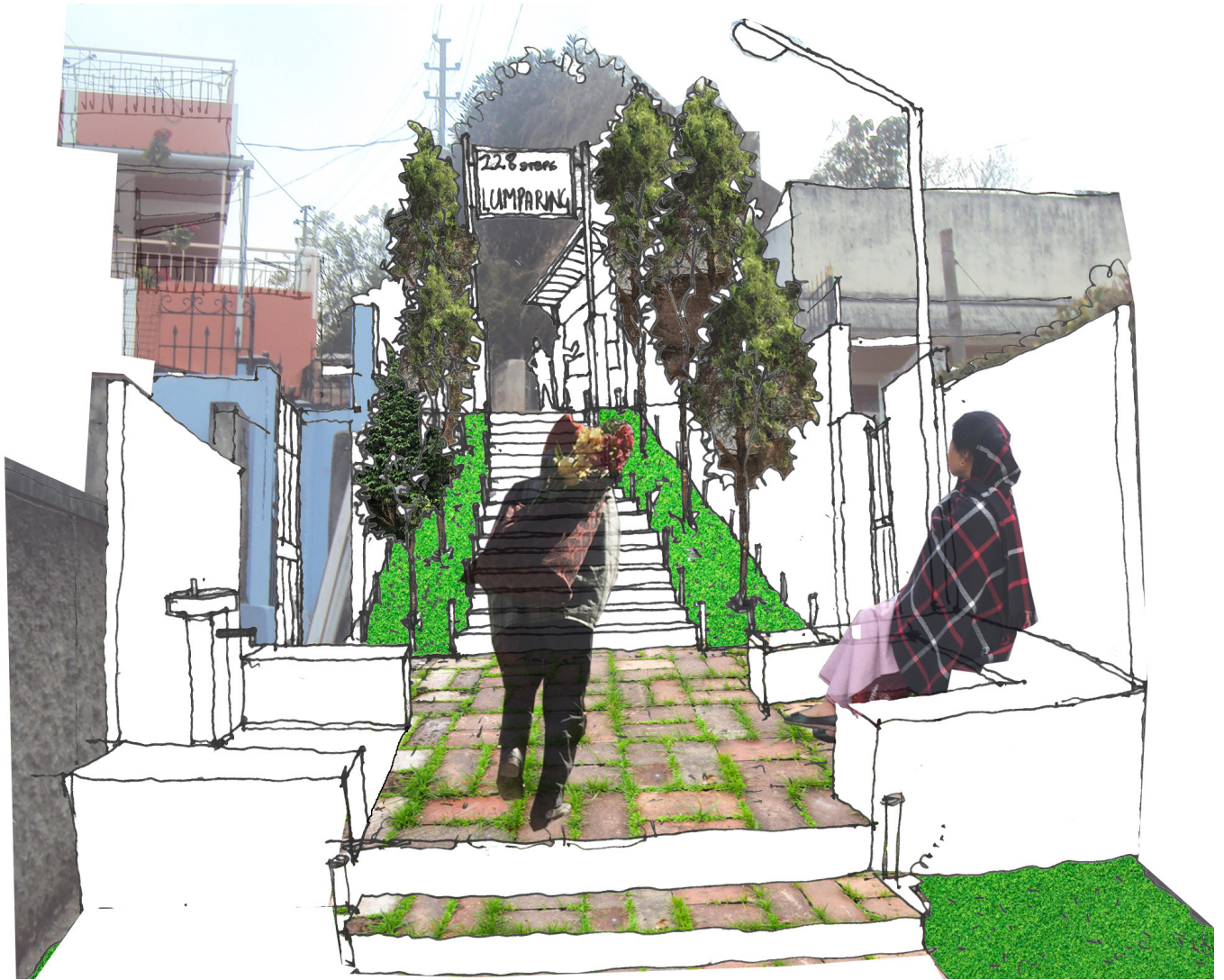


Illustration 139 : Intervention area with public seating areas

Source: Author

These pathways in certain areas can be quite long and steep. Hence provisions of certain rest areas along the length of the pathways with drinking water points would be quite helpful for the people using these streets.

The image above (Illustration 139) shows the resting points but not only for people moving through the steps but also for people who are using the public taps. The presence of seats allow for people to sit and pause while they engage in conversations. One of the reasons why the current state of the pathways becomes just a corridor is that there are no urban elements which suggest or sway people to sit and rest and become attached to the place as they talk to people or even sit quietly and enjoy the view.

Case 2

The location of this intervention connects two vehicular streets (Illustration 140). One of the streets follows the main ridge line of the landscape and the other vehicular street goes parallel to the contour.

This location is called lower lumparing and consists mainly of residential buildings. Because of the steep sloped terrain construction of roads through these pathways to make all the households accessible to vehicular entry is not possible. Hence the pedestrian paths are the most reliable ways to get to such locations.

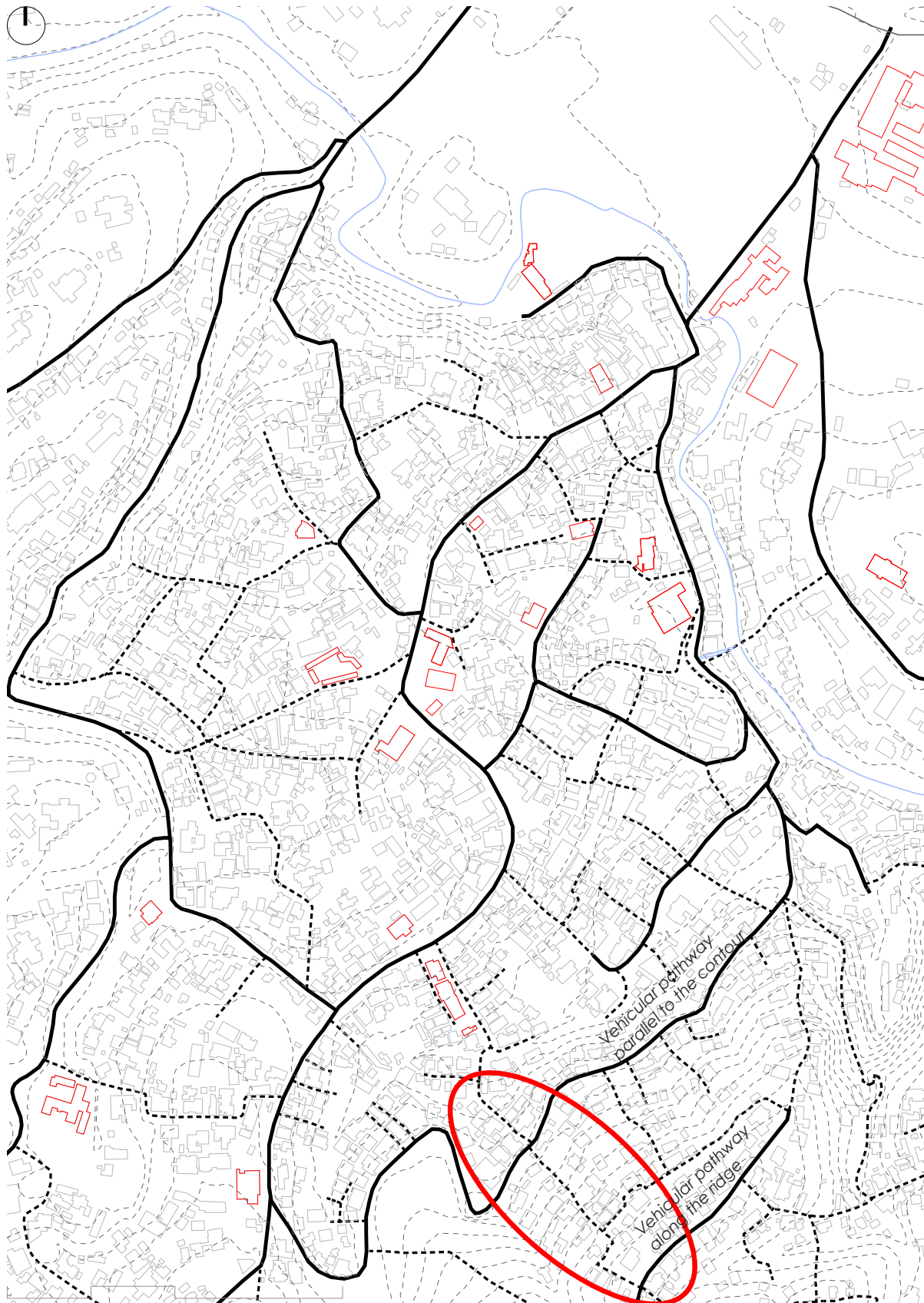


Illustration 140 : Sample study area case 2

Source: Author

With the current state of the locality it is seen most of the people have done away with the old vernacular type building constructions to give rise to new multi storied buildings (Illustration 141). This illustration shows the sloped roof households as well as the new typology of multi-storeyed flat roof households.

This area is chosen because it demonstrates how two typologies of activities can exist at perpen-

dicular intersections. There is a main road activity shown in red as well as a pedestrian street activity shown in yellow. Both the streets benefit from each other in the sense that pedestrians getting off from public transport and then move into these residential areas and people from the pedestrian streets can feed into the main streets. Both pathways benefit from each other.



Illustration 141 : Zoom in on intervention area

Source: Author



BEFORE

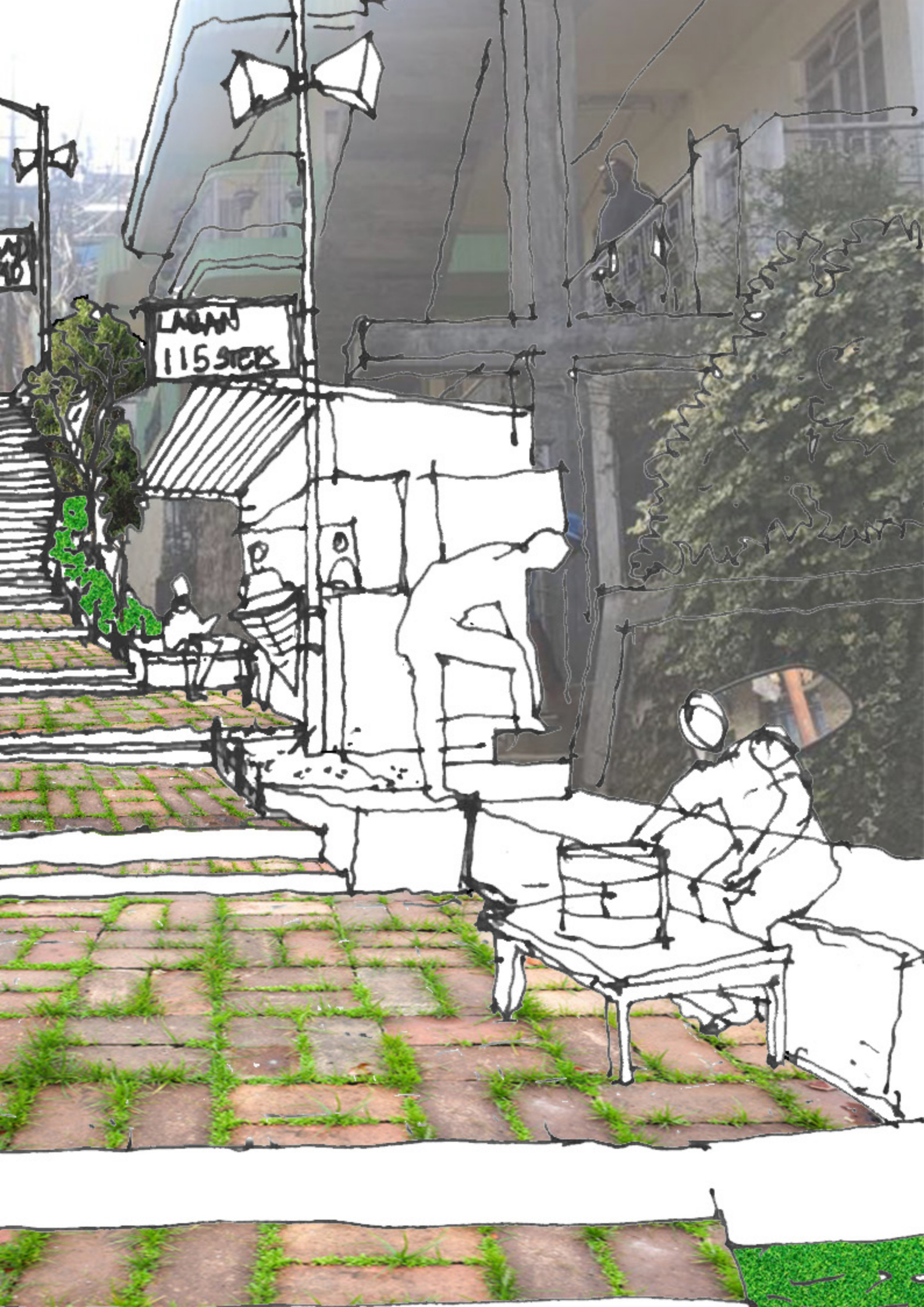
Illustration 142 : Current condition





AFTER

Illustration 143 : Proposal



Following the same design principle of reviving the old water systems, enhancing legibility through green introduced in these paths and encouraging vitality through the diverse activities which happen on these streets result in a more imageable street environment.

around and cause nuisance in the late evening hours. The purpose here is to revive the previous activities which occurred in these streets and also change the physical character of these streets in order to elevate the value of the streets as social spaces to a higher level than what they are considered as today.

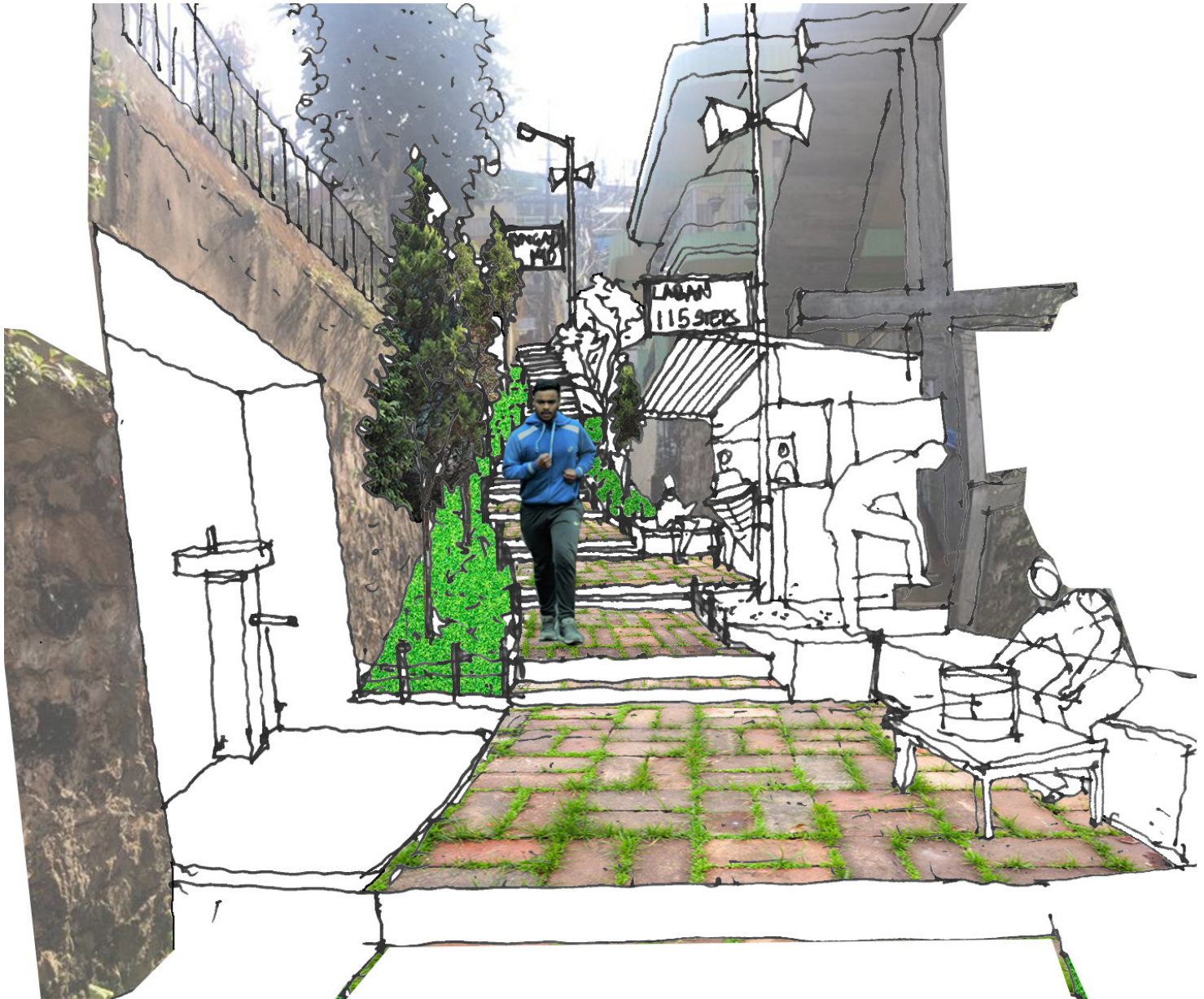


Illustration 144 : Intervention area meant as jogging tracks
Source: Author

What is seen here in the image below (Illustration 144) can be conceived as something which is desired. Currently these pathways, as already described in the problem statement, are areas which are experiencing a slow decline from being areas thriving with social interactions and public life to being places where miscreants loiter

The image here shows how these pathways can be used for jogging in the early morning hours. The local water points can also be used to provide drinking water for the people. Someone taking a jog can use these restpoints to rest and fill up their water.



Illustration 145 : Intervention area with local amenity shops serving as local meeting points
Source: Author

The image above (Illustration 145) shows how these pathways would be used in the evening timings when the small amenities shops would be open for use. Most of the residents pass through these pathways on their way home from work. The presence of such activities allow for more chance encounters among residents. These amenities shops also allow for what Jane Jacobs refers to as the eyes on the street. This makes the streets more safer. One of the advantages of this is the fact that they act as the surveillance systems for children playing on these streets. As seen in the analysis chapter these local shops or tea stalls have a very important role in the imageability of the city. The example from the mental maps produced by the respondents shows that the small food joints and tea stalls are very imageable elements in the city.



Illustration 146 : Intervention area with local food joints
Source: Author

The image above (Illustration 146) shows local street vendors selling food at the various rest points. These street vendors contribute to the street life. In the case of the current context these street vendors usually occupy the positions where there are two three activities clumped together to attract more people. Usually just a small seating area and a large enough landing would suffice to allow for the locals to come and set up shop here.

Usually people who work two or three jobs open up these joints for their extra income and having such places located next to areas of activity facilitates their effectiveness.



Illustration 147 : Intervention area showing local water taps as areas of social interactions
Source: Author

The local water taps are some of the most important points on these stepped streets. They are the spaces where people could go collect water from and not only form areas of activity, but have a deeper social meaning embedded to them. These are places where relationships and community bonds are formed with ones fellow neighbours. Hence, reviving these activities proves to be crucial to giving back a sense of community to these streets. Vitality is a very crucial factor which contributes to the activity aspect of identity. What vitality means is essentially having diverse activities happening at different times of the day. The presence of such activities(public water taps) in the mornings and local street vendors and ammenities shops in the evenings contributes to this vitality.

As pointed out in previous chapters a strong identity to a place is brought about by peoples attachment to a place. Place attachment is a concept which is brought about by three important factors.

- i) Frequency of usage
- ii) Level of familiarity
- iii) Length of engagement

The activities associated with these paths help promote the frequency of usage of these informal paths. The legibility brought about by the form of the street is also conducive for level of familiarity of the residents with these streets. Finally the meaning associated with the revival of these water taps and presence of seating areas and small ammenitiy shops increase the lenght of engagement of the users with these pathways and hence improve on the place attachment to the place. Thus a stronger attachment results in place making which leads to local identity.

To conclude this chapter we have explained three different characteristics of looking at the aspects of the informal paths. These were the

spatial aspects, the technical aspects and finally the social aspects. In each of these aspects a concious attempt was made to incorporate the framework proposed which included the form, activity and meaning.

The spatial aspects showed how the physical form, in this case the alternating pattern of the trees as well as the texture of the ground contributed to the legibility of the street character. These aspects are very important from the experiential point of view of the informal pathways.

The new function proposed to the paths such as the water purifying systems gave the pathways a new meaning and elevated them to a higher and more important value in hilltowns. In this way the technical aspects contributed greatly to giving the pedestrian paths added meaning.

The clubbing together of diverse activities such as public taps and local ammenities shops along with provisions for rest areas gave the pathways an added social value to them. This is how activities influenced the social values of such places.



Conclusion and reflection

This chapter concludes with the answers to the research question and the sub research questions and the reflection on the research.

7.1 Conclusion

The rise in the construction of new multi storied building typologies in one of the oldest neighbourhoods of the city of Shillong has caused a rise in the concentration of small alleyways which are slowly becoming unsafe passages for pedestrian movement. This has been a result of moving away of old Bengali families who have been staying in this neighbourhoods for three to four generations. They sell off their land and the quaint bungalows and in their place this results in huge multi-storeyed apartments which have no connection with the street level. The outcomes of this are neglected in between spaces which become unsafe and unpleasant to move through. The increase in the population of the city have also resulted in a shift in the distribution of water from this old neighbourhood to other areas of the city which have caused a discontinuation of some of the old public water systems which used to be present along these pedestrian pathways. These factors have compounded together to witness a slow degradation and negligence of the in between spaces of the city which are the informal paths.

A look at how value can be given back to these streets in order to minimize their further degradation is looked at. This method uses an identity framework based on form, activity and meaning in order to give new life to these informal paths. The values associated with reviving some of these old services as well as bringing in new functions contributes to the place making of these informal paths.

These paths can be a way to contribute to a healthier and more inclusive neighbourhood through the activities which happen on them. Hence, these networks would form the social infrastructure of the city.

The research question thus posed for the purposes

of this research is:

How do we propose a regeneration strategy for the older city neighbourhood of Shillong, India by strengthening the characteristics of public space networks in order to reinforce the identity of hill-towns?

To answer the main research question the sub research questions will be answered first.

Sub Research Questions

SRQ 1

What is the relation between the morphological structure of the city and the functional structure of the city which helps create public spaces?

The city structure is predominantly influenced and shaped by the topography. The contours have created conditions where we see the predominant functions develop along the ridge line of the landscape and secondary functions branch out from these main streets. The primary streets are where most of the commercial activities happen and the secondary streets are the informal pathways which is predominantly a pedestrian realm. These streets form the social backbone of the city creating situations where social interactions can take place such as the local water points and the amenities shops. The pedestrian character of these streets is attributed to the fact that some of the slopes are quite steep which makes it quite difficult for vehicular movement. This thus provides an opportunity for enhancing a more walkable city. Thus, we see there is a clear line of usage of two typologies of streets. One which is more inclined to vehicular traffic and commercial functions and the other type which is more pedestrian friendly and addresses the social characteristics of the context.

SQR2

What are the aspects of the informal paths that contribute to sense of place of public spaces and what aspects should be preserved?

As drawn from most of the interviews with the residents the aspects which contribute very strongly to sense of place is the common history the people share with certain locations. Their commonalities in the public realm is what helps shape a stronger sense of belonging to a particular community regardless of ethnic backgrounds. Historical places such as the "Iew dak" night market and the public tap which used to be located there but no longer present contribute strongly to sense of place of public spaces. The history of the location from its origins as a small farming village to the occupation by the British to its current state are what influences the sentiments of the people who belong to one of the oldest township of Shillong. Other aspects such as pedestrian friendliness offered by the narrow streets also contribute to the security of such places which emphasizes a stronger sense of place. The presence of people on the streets also contributes to a sense of place since a public place is a social realm and presence of people on the streets enhances their attractiveness.

SRQ 3

What are the qualities (mental, physical, social) present at the neighbourhood urban tissue level which add to the identity of hilltowns?

Identity is brought about through attachment of people to a certain location and this attachment stems from a sense of purpose a place has to fulfill the users needs. What is noticed from the case of hilltowns is that the core values which add very strongly to the imageability and meaning to a place stem from a connection to the history and the story behind the place. The im-

portance of what once was and what is no longer there is what helps create a narrative of a place which adds to its identity. Hence we can say that the narrative behind a place are what helps create a strong mental image of a place. The fine grained activities are what contributes to the social characteristics of the place and it is these diverse activities which happen at various times throughout the day which facilitate a more positive social atmosphere. The physical setting is what creates the conditions for activities which will foster a stronger image. It is the form of the urban environment which contributes to the urban identity. Thus, with these in mind the aspects of form, activity and meaning are a very useful tool not only for the analysis of what makes a strong identity but also the design using these tools.

SRQ 4

What is a desirable future for these informal paths?

The design interventions help us evaluate the future of a more walkable city which builds on the heritage of these pathways and local water points as the social infrastructure of the community. Reintroducing identity to these pathways by bringing back old functions will improve the legibility of these streets. Adapting the form of the pathways to new trends of more walkable cities owing to the problems of traffic congestion will help encourage a positive experience in the streets and will improve on their place making. The addition of the trees along these pathways will aid in bringing back green into the city.

This brings us to the main research question:

How do we propose a regeneration strategy for the older city neighbourhood of Shillong, India by strengthening the characteristics of public space networks in order to reinforce the identity of hilltowns?

Reviving old functions and activities along the informal pathways will help reinforce the place making of these pathways. Revival of these water taps allows us to bring back the importance of the pathways themselves as a very vital part of the community. Community structure was based on social interactions among neighbours which revolved around these small locations. These informal paths were the lifeline of the community since they would allow for accessibility to the water points and also the rest of the city. Hence they had a stronger meaning in the past, which was undergoing a decline due to the loss of significance of these places.

Bringing in the green into along these pathways will point towards a new recognition of these paths for a healthy street life. These streets transform into movement networks which facilitate a more pedestrian friendly city and also become the hubs of social interactions. Preservation of the width of the footpaths and the steps themselves is crucial as their width allows for the eyes on the street and assures that the streets are not rebuilt to motorable roads which is the case seen in some of the pathways existing currently.

Hence, reviving activity and preservation of the form helped bring about a new meaning to

these streets in order to contribute to the place making of these streets which results in local identity.

Looking ahead

Due to the time constraints of this project it was only limited to consider the aspects of identity and imageability for the improvement of the public realm. One of the factors which was mentioned here was the change in the social structure of the neighbourhood due to the moving away of the old families living in the neighbourhood since its origins. This aspect as to how the social changes that would take place as a result of this have to be considered. More research could be looked at into how the changing social class would influence the usage of these spaces and with it what values would become important to new user groups. This ofcourse would require a more detailed study and also more interviews to be conducted on the different groups of who have only recently come to stay in the area. Also this research was only conducted to study one part of the city and did not look at covering all the other areas of the city which may have the same topographical conditions but have a different societal structure to them. All these factors play a big role in seeing what direction these informal pathways could go to once taking into account all of these factors.

7.2 Reflection

The graduation topic which is called 'The future of informal pathways – Reinforcing the identity of public space in hilltowns' is to define the tangible and intangible aspects of the informal paths of Shillong, India and to use these aspects to revive the pathways as the social infrastructure of the city.

7.2.1 The relationship between research and design

The aim of the project was to achieve a renewed value for the informal pedestrian streets of hilltowns to facilitate a better quality of public space for one of the oldest townships of Shillong city, a hilltown in the North Eastern part of India.

The first aspect of the thesis was to establish what are the attributes to value while considering a renewal strategy. This is where the research plays a crucial role in establishing guidelines on which to judge what aspects to keep, to improve or to change and do away with. The spatial analysis done through mental mapping of the context helped uncover the imageable aspects of the physical environment of the research area. Interviews and observations of the site also helped to establish what aspects of the pedestrian street networks are valued by the residents and what elements are missing.

Secondly, the research incorporated a framework of using the activity, form and meaning as aspects of identity and these helped work as a tool for the design itself. One aspect of the thesis was to uncover what was heritage in the pedestrian networks and what intangible and tangible aspects of the streets contribute to the identity whether it was in the activities of the street, the physical form of the street or the meaning associated with the street. Hence, based on these attributes revealed through the framework and using the observations and interviews a renewal strategy was able to be proposed which helps strengthened the identity of these street networks.

The framework of form, activity and meaning have been useful for the purposes of this project because they look at the tangible and intangible aspects of the informal paths. The deterioration of the quality of these informal paths have been a result of the changing form of the urban built

fabric which resulted in the negligence in the form of these informal paths. It has also resulted in the decline of use of these informal paths as the social spaces for interaction among residents. The decline of usage of the public water systems have resulted in the loss of meaning of these spaces. Hence, it is for these reasons that this framework was a useful method to study area. This framework helps better evaluate the performance of the informal pathways with respect to place making in these pathways.

Finally, place attachment theory is closely linked with place identity. Hence, this was used as a tool to evaluate how well inhabitants were linked to such places. Place attachment is a connection between a person and the environmental setting and the more a place is designed to cater to a person's needs the more attached a person will feel to a place and with it a place starts to develop a certain identity to an individual or a community. Place attachment theory helps identify place attachment constructs that can be used as an indicator for assessment of the design aspects. Certain aspects of a place can add attachment for an individual whether it be the meaning, the physical form of the place or the activity which occurs in the place. Thus, higher attachment to a place results in a stronger meaning and image of a place which leads to a stronger identity.

It was important to have a design because some of the aspects one comes across while designing can be related back into the research. For example, the technical aspects of the design which may seem quite insignificant proved to be a very important aspect which could be related back to the framework of form, activity and meaning. What the water purification system meant to the form of these informal paths and how the physical form of it shaped the meaning of the place. Therefore the act of making the design allows on one to reflect on all the aspects and relate it back to the research as a guidance.

The design in a way provided inspiration and clues on what aspects of the real world problems could be better integrated back in to the theoretical framework to come to the best possible desirable future solution.

7.2.2 The relationship between the theme of the graduation lab, the Urbanism track and the subject study chosen by the student within this framework(location/object)

The History and Heritage vector studio helps look at what value can heritage give to the place making. The pedestrian pathways of hilltowns is a perfect example to study the social, spatial and cultural aspects related to heritage as these pathways are constantly undergoing change through time. These streets are the realms where social and cultural ties are made contribute immensely to the wellbeing of the community. The spatial character of these streets is also vital to facilitate grounds for communication and interaction among community members. Thus, heritage as a tool for preserving some of the qualities of these streets helps foster growth in terms of social ties among neighbours.

The change in the social structure because of moving away of the generations old families of the neighbourhood and coming up of the multi storied building apartments have resulted in the loss of value of the in between spaces. As an urbanism student this research looks at how heritage can add a positive value to the public spaces in hill areas and result in a continuity of the values of a community. The revival of these streets as the social spaces of the city will create better living conditions which improves on social interactions with neighbours thereby helping to reduce and prevent the migration of these families away from these areas. Although that being said the migration of these families away from these areas is not only the quality of the space but also the job opportunities elsewhere. However, these interventions could add a positive point to retaining the social structure of the neighbourhood.

In the field of urbanism, the subject touches on the smallest scale of individual and local aspects, how locals can benefit from these public water taps as hubs of social activities and touches on the broader context of how the community can collectively value this network of public water systems as network of pedestrian life and public realm.

7.2.3 Elaboration on research method and approach chosen by the student in relation to the

methodical line of inquiry, reflecting thereby upon the scientific relevance of the work

The approach stems from finding urban place identity in the informal pathways of hilltowns. In this research a framework was created to define identity. This is based on the form, activity and meaning of a place which thus helps create a framework for research, analysis and design.

This research integrates several theories from the place identity to place attachment. These theories helped analyze the various attributes of the informal streets as well as the assets present in the local context in order to further implement them in the design proposal.

Spatial analysis through mapping of the topography and typology of street networks and pathways helped further define the research areas and the different locations on which to implement the design proposals.

Literature review on the different theories related to place attachment and place theory help define certain parameters on which to assess the design of the project. This was very useful in order to work as a base from which to analyze and design the proposals.

Interviewing the residents and making mental maps of the locality based on the people's mental image of the place provided evidence on what were the most distinguishing spatial features of the neighbourhood. This method along with the interviews and observations helped review what were the aspects of the urban environment which provided the meaning aspects to the urban identity.

7.2.4 Elaboration on the relationship between the graduation project and the wider social, professional and scientific framework, touching upon the transferability of the project result.

In the context of Shillong a hilltown meant initially only for a small population the swelling up and growth of the city have posed huge threats to the small settlement structure of the city.

Informal streets are not uncommon in developing countries and are areas which fall prey to misuse and negligence. The framework proposed in this

thesis by using identity as a catalyst to activate and reanimate these informal streets in order to redefine the future of such streets is what this research aims to achieve.

These pathways have in the past been used as a connection but also as served as a social space for neighbours to interact and mingle with each other. For example, the public taps present on the pedestrian pathways were always a source of activity for the residents. These areas also had a deeper meaning to the community since these were areas of social interactions and it also manifested itself in a physical form. Today, however, with changing times and ever-growing urban population these streets and pathways have lost importance and have merely become a physical thoroughfare. This research points to a future of these streets by giving new value and added meaning to these informal streets. The framework proposed can work towards looking at other areas which have informal pathways and using their attributes to further strengthen the identity of these streets as these are the areas where most of informal activities do happen. Other hilltowns can benefit from this framework because of similar geographical conditions. The values associated with street networks are also very common in other hilltowns hence looking at how these pedestrian pathways perform in one case could provide a base for other hill areas with similar cultural backgrounds.

7.2.5 Discuss the ethical issues and dilemmas you may have encountered in doing the research, elaboration of the design and the potential applications of the result in practice.

This research provided a design proposal to redefine the pedestrian street networks as a social infrastructure which contributes to the quality of life and well being of the inhabitants. The social ties which inhabitants share with their neighbours are facilitated through these pedestrian street networks. The design prioritizes different activities which happen at different times of the day. This further improves the usage of these streets which results in a more vibrant street life.

The ever-changing character of the streets brought about by change in mobility and transport provides a challenge while discussing maintaining the pedestrian nature of these streets.

Another factor creeping up is also the desire for every household to own a vehicle because of ease of transit. Due to ever increasing demands for vehicular connectivity some of these streets are widened to pave the way for vehicular traffic which diminishes their importance takes away the informal activities and pedestrians from the streets. This does create a conflict over the pressures of accommodating all of the vehicular traffic as opposed to allowing some of these pedestrian street networks and space for the public realm. Hence, accessibility and providing adequate modes of mobility for people living in such areas will need to be looked at.

One of the aspects most apparent and prominent in the project was the introduction of renewal of the old system of public water supply. By activating these streets and bringing back the social infrastructure to the pedestrian pathways. Preserving the value of these streets will lead to a more vibrant community life and safer and more frequently used streets. However, with the increase in the population size and number of residents wanting to live closer to the city centre these small interventions will not be able to cater to the size of population moving in. Hence, further studies need to be done with regards to controlling the density of populations in such clusters and around the activity hubs.

The increase in the quality of life of the neighbourhood but also puts a threat of gentrification since the already existing condition of growth has seen the moving out of old families and coming up of the new multi storied buildings in their place. Means to control the emergence of these multi storied complexes have to be addressed also due to the fact that the region is a hilly area and is prone to other forces of nature such as soil erosion and landslides.



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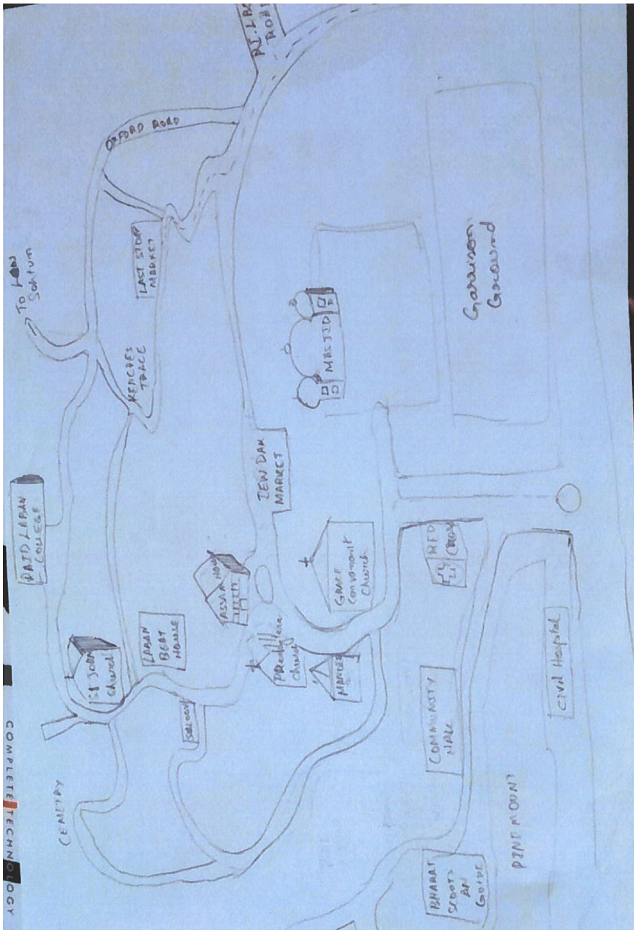
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Appendix

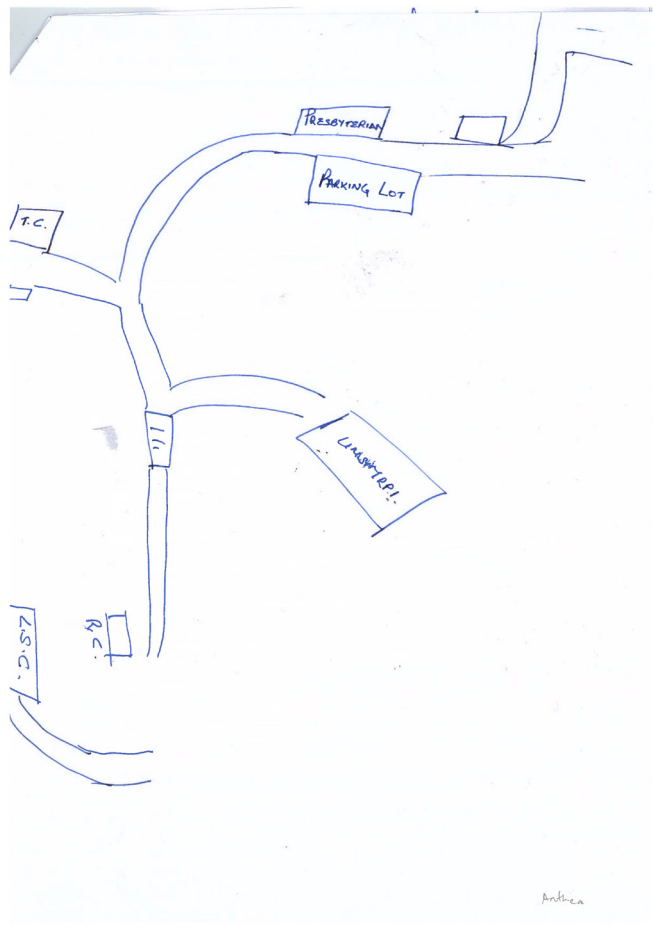
Mental Maps

These are some of the maps which have been prepared by the respondents. Some of the maps were prepared while taking the interview itself while others were prepared by the respondents themselves at a later stage. Although the maps were prepared by only a few of the respondents and this number does not necessarily represent the entire population, however it can still be inferred that if the same exercise were replicated on a larger scale it would yield quite similar results. The small sample range was owing to the fact that the researcher wanted to extract more in depth information from each of the respondents.

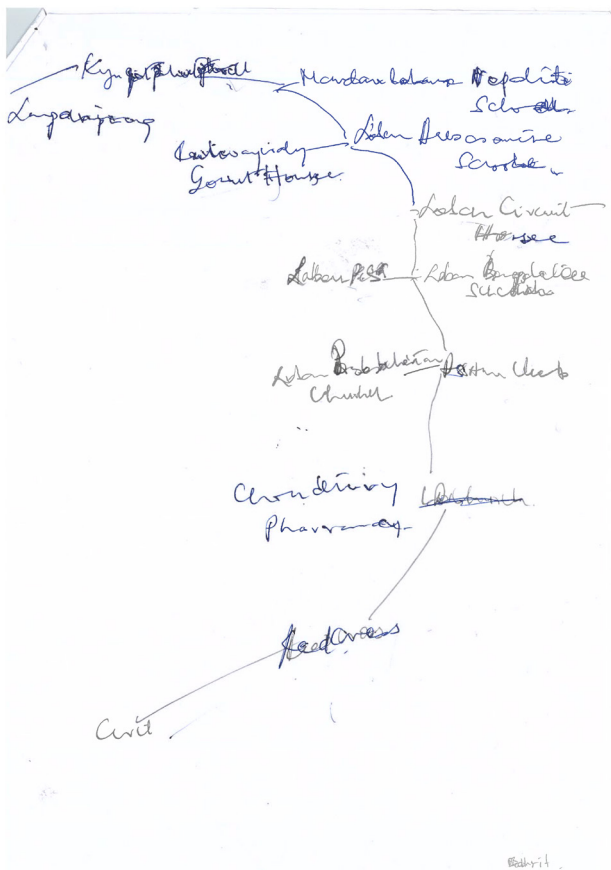
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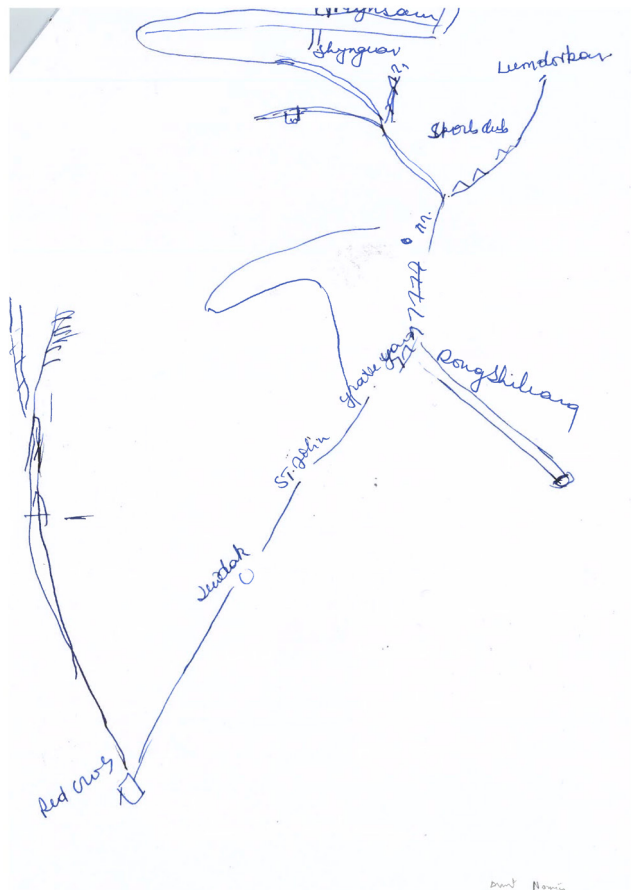
Casper Syiem
Date - 10-03-19
Visitor



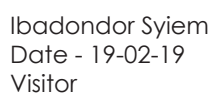
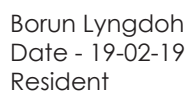
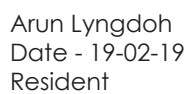
Anthea Lyngdoh
Date - 18-02-19
Resident

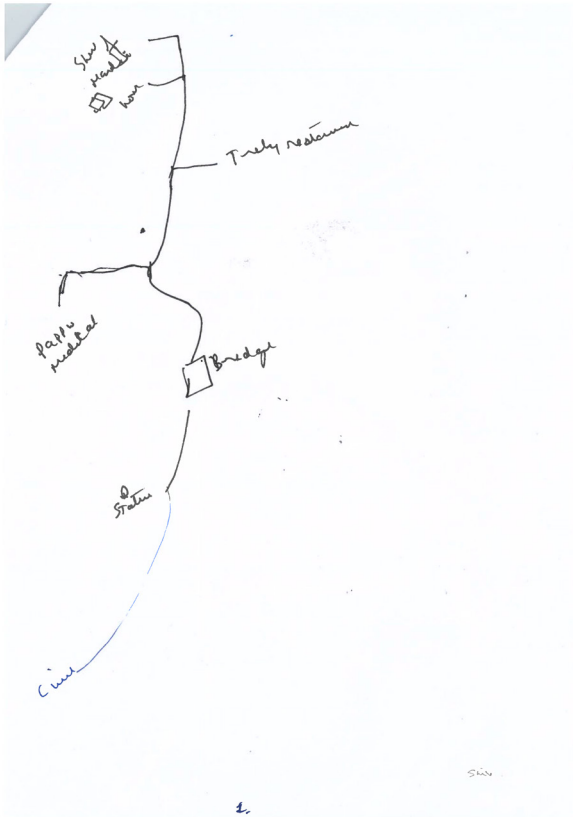


Richmond Synrem
Date - 19-02-19
Resident

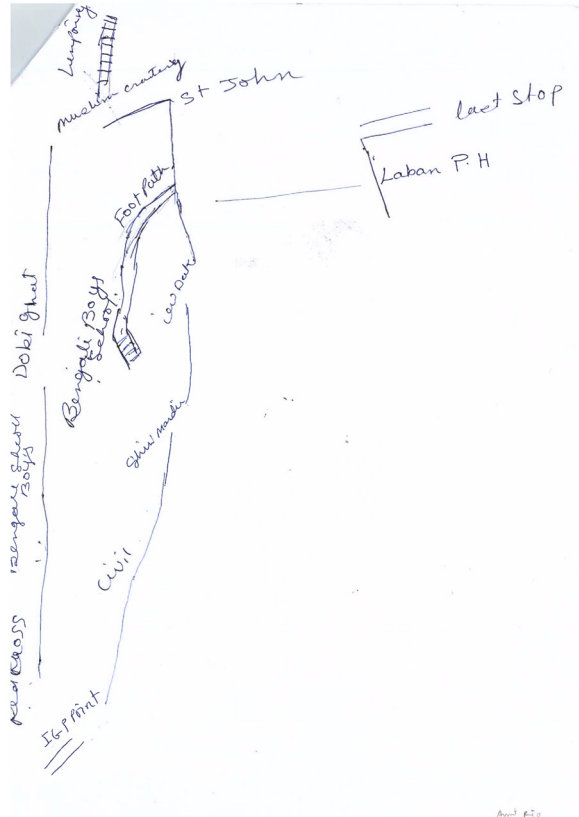


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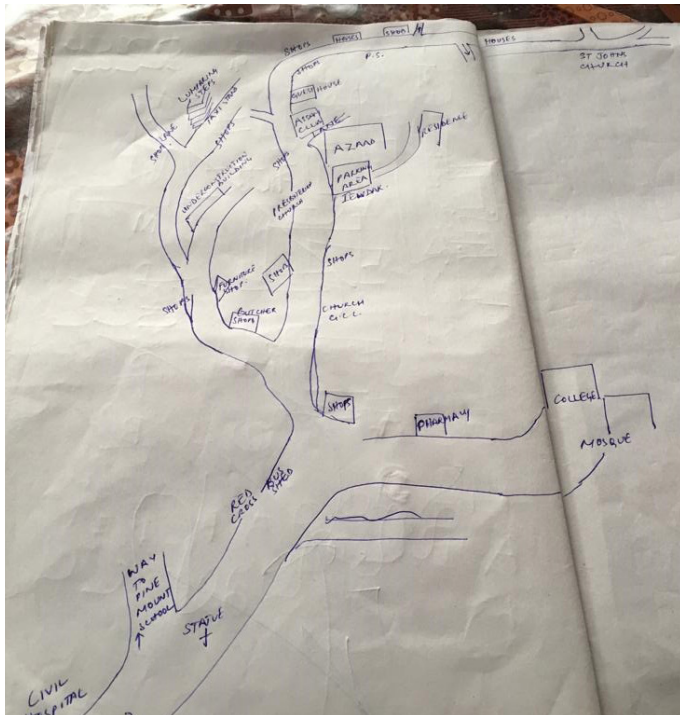




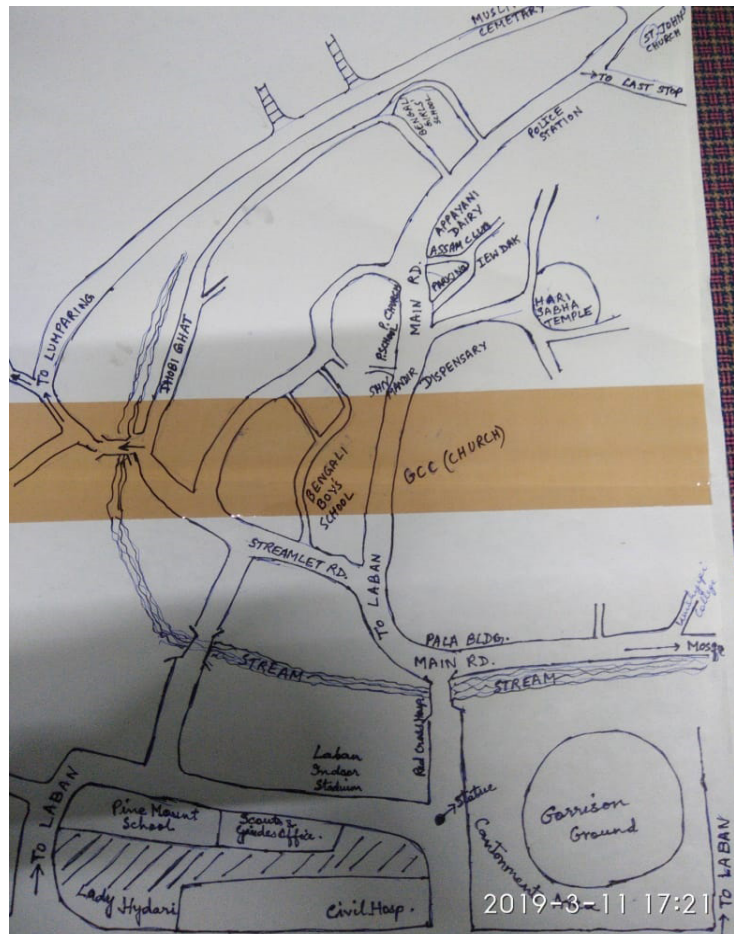
Moni Rymmai
Date - 19-02-19
Resident



Riolinda Paswet
Date - 19-02-19
Resident



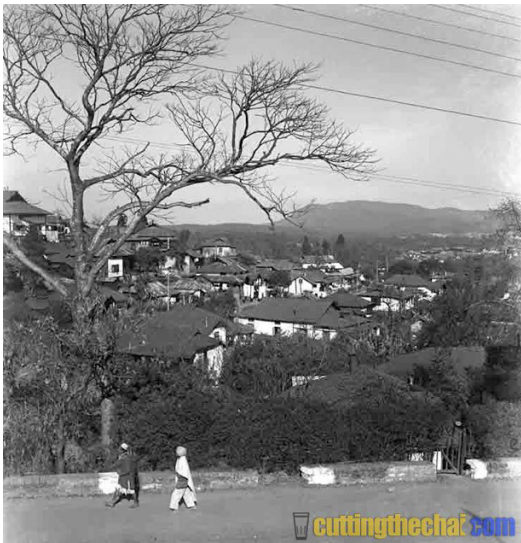
Vinolinora Paswet
Date - 19-02-19
Resident



Trinita Khongsngi
Date - 11-03-19
Resident

Site Images

Some of the images which were not included but proved quite helpful as inspiration for this thesis are included here.



Shillong in the 1940's

Source : <https://www.cuttingthechai.com/2012/06/5837/vintage-photographs-shillong-1948-and-vallabh-bhai-patel-calling-people-assam-lazy/>



Pathways in Meghalaya

Source : Author



Paths in The Netherlands - Tillefonne

Source : <http://www.flipvandoorn.nl/website/tillefonne/>