The Spaces In-Between:
Learning From Kampala's Slums

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Abstract

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Informal settlements, also known as slums, favelas and barrios have become ubiquitous in developing countries' cities. These areas are usually described as places of poverty, squalor, and uncleanliness. To many, they are places that need to be fixed, improved or removed from the city. The impoverished, difficult life of slum dwellers have been romanticized through media and movies such as Oscar Award Winning film, Slumdog Millionaire (2009). Architects like Teddy Cruz and Rem Koolhaas are researching informal settlements to decipher and unravel what makes them tick. Many hope to use the knowledge discovered in slums to improve their conditions. This thesis begins with a study of the informal settlement of Katwe, located in Kampala, Uganda. Research and analysis was done to uncover and reveal the logic of how an informal settlement like Katwe functions within the larger, formal city of Kampala. The purpose of the study, without romanticizing the living conditions that many people face in slums, is to learn from them. Slums are areas of high density, extreme walkability, and are built to the human scale. Many Western, developed countries are trying to improve their cities by making them more walkable and dense. Perhaps slums like Katwe can serve as an example in creating new communities that are built for people, pedestrians and public spaces.

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THE SPACES IN-BETWEEN

LEARNING FROM KAMPALA'S SLUMS

TABLE OF CONTENTS

FORWARD

I spent two years living in Kampala, Uganda. During this time, my daily activities were focused in Kampala's informal communities, more commonly referred to as slums. One place I spent a lot of my time was in the slum of Katwe. A crowded slum just south of downtown Kampala. I walked along the same roads and paths as everyone else. It was in these streets that I interacted daily with members of the community. It was in the meandering paths and streets where life occurred, in the spaces in-between the huddled buildings. I could buy a meal from a street vendor, pass someone selling fish out of a wheel barrow, and stumble upon someone washing their clothes. In the background would be the sound of a TV and someone laughing. I would pass by people sitting on their front step. I could get stopped by a person begging, or stumble upon an impromptu game of soccer in the alley. At first, this seemed chaotic, crowded, and exactly the opposite of where I came from. I was not sure how or why, but it worked. Katwe, while having its problems that are inherent to slums, worked. It was a place for people to live. It was safe. People made do with the space they had. They knew each other. They shared resources like water and sanitation facilities. The public realm, the streets and paths, were places of social interaction.

CHAPTER ONE: INTRODUCTION

Figure 2 Drone imagery of Katwe

Across the world, massive amounts of people are migrating to cities. Every country around the world is seeing an increase in their urbanized populations. For the first time in the world's history, more people now live in urban areas than rural. (UN World Urbanization Prospects, 2014 Revision) Since 1950, the number of cities with a population over one million people has increased from 86, to 500 cities in 2015. Urbanization has not been uniform across the globe, instead, occurring at different rates and times depending on the region. Much of the developed world reached high proportions of their populations living in cites, well over 80 percent, in the last century. In the coming century, the highest rates of urbanization, accounting for the majority of urban growth across the world, is projected to occur in Asia and Africa.

In Africa, the urbanization rate will be fueled by the population growth rate. The high population growth and urbanization rates in Africa, like other parts of the developing world, have already caused many cities to grow faster than their infrastructure will allow, creating areas that are left undeserved and outside of the formal city planning process. These areas have become common in cities across Africa and the globe. They often lack adequate access to water, sanitation, and secure land tenure. They are called slums, favelas, barrios, informal settlements along with many other names. These areas have developed as responses to the immediate needs of population growth and the influx of people who are moving from rural areas to cities that are either unable to find, or afford, a place to live in the formal, planned parts of the city.

One country in East Africa, Uganda, has a high proportion of its urban populations living in informal settlements. In the capital and largest city of Uganda, Kampala, these informal communities represent two thirds of the population. They are built on unused or undesired land in pockets throughout the formal city. Because these are typically on illegally squatted land, they are not part of the formal city planning process. Instead, these ares are left to develop and grow organically, without the input or help of governments, architects and planners. Due to this lack of oversight and governance, people are left to do what they seem fit to address their most pressing needs.
Many planners, anthropologists and governments have sought to solve the "problem" of slums. In Kampala, its slums are riddled with NGOs (non-government organizations), charities, and other organizations that are there trying help the communities and provide the basic infrastructure and amenities . These slums are places of extreme poverty and should be improved, upgraded and integrated into the formal city.

It is easy to see the obvious problems and challenges associated with slums. But can slums be described only by what they lack? To say people in slums lack access to water and sanitation and secure housing describes nothing about the process in which they access these amenities. Slum areas are created for and by the people that inhabit them. They are places where people live, work and create communities.

> *"Placemaking is the way all of us as human beings transform the places in which we find ourselves into places in which we live . . . Placemaking is not just about the relationship of people to their places; it also creates relationship among people in places." (Schneekloth & Shibley, 1995, p. 1).*

How do slums develop and function? What is the problem? Is there a problem to begin with? Perhaps, instead of approaching slums as problematic and detrimental, slums should be treated as places of knowledge and understanding of how human beings create communities with whatever resources they have.

This thesis begins with the notion set forth by Sytse de Maat, an architect who studies and writes about slums in India:

> *"We believe that one should start with a look at what is there (in slums) and try to understand the logic of it all. Because there is a logic to it all. It makes perfect sense when you have the will to appreciate what is there."*
> - *Sytse de Maat | The Perfect Slum*

Building upon this idea, this thesis takes an explorative approach

to the study of the informal slum community of Katwe, located in Kampala Uganda. The goal of this thesis is to reveal the logic in how the informal settlement of Katwe functions within the formal city of Kampala. This study consisted of a site visit to Katwe in Kampala where research, mapping, diagramming, interviewing and other documentation took place around common activities in Katwe, namely: housing, water, sanitation, food and transportation.

Instead of focusing on what is not working in Katwe, this thesis seeks to reveal what is working. Uncovering what Katwe does well may reveal more about the place that focusing on what it does not do well. And finally, instead of trying to fix Katwe, use it to explore ideas how our cities in the developed world can learn from the way slums like Katwe function. What is uncovered in Katwe will be applied to a neighborhood in the city of Seattle, Washington.

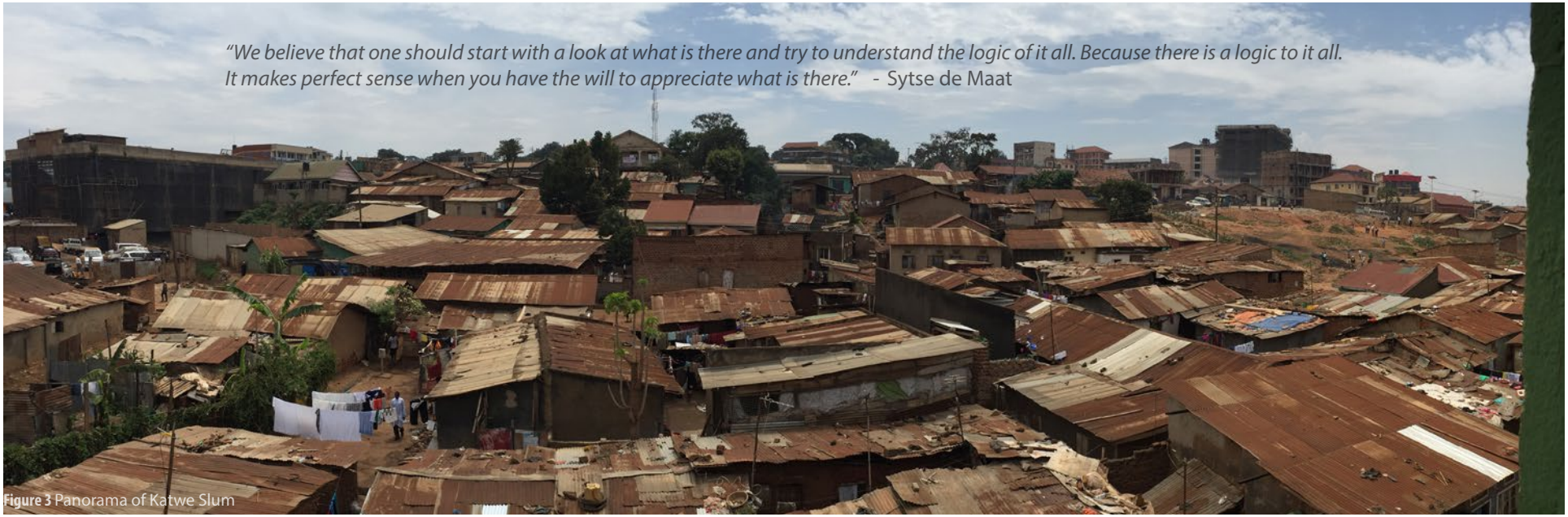


Figure 3 Panorama of Katwe Slum

CHAPTER TWO: SLUMS....

Figure 4 Image of Katwe Slum

Figure 5 World Map

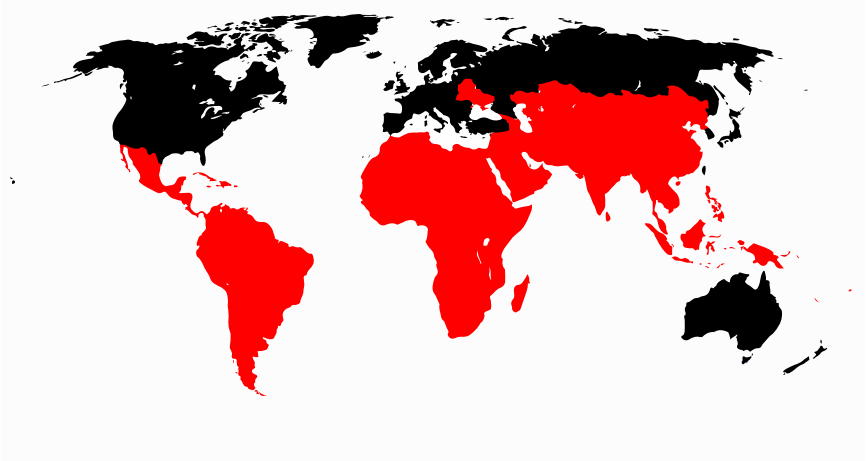


Figure 6 The Global South

Figure 7 Uganda

SLUMS, A GLOBAL RESPONSE TO URBANIZATION

The global population has surpassed 7 billion people. Of those 7 billion, 15 percent, or 1 billion live in slums. (UN World Urbanization Prospects, 2014 Revision) As described earlier, slums are places lacking basic access to sanitation, water, secure housing and even food. Slum dwellers face insecurity in housing and are constantly at risk of eviction from the land they inhabit. The shear number of slum dwellers is astounding, and to architects, stands as a call to the profession to become more involved in learning about informal communities. Douglas Klahr, an associate professor at the University of Texas argues that "a new type of social responsibility that is as raw and gritty as the global crisis of one billion slum dwellers must become a new ethos in the pedagogy and practice of architecture." (Klahr, 2011.)

Most slums exist in what is called the global south. These are areas of the world that are considered to be less developed in infrastructure as well as economically. The global south is comprised of much of Asia, the Middle-East, Africa and Central and South America. One area of the world that is expected to have the largest increase in percentage of population living in cities is Africa. (Center for Global Health and Diplomacy)

UGANDA

Uganda, a country in East Africa, has the highest population growth rate of any country in the world. It is expected to maintain this position through 2050 as its population almost triples from 37 million inhabitants to 100 million. Since 1960, when Uganda gained its independence, its population has grown from 6 million to its current total. The increase in population and urbanization has pushed millions of people from the rural areas of the country into the capital city, Kampala. For a comparison in understanding Uganda's population challenges, Uganda is about the same size as the US state of Oregon. Whereas Oregon has four million people, Uganda currently 37 million people. (WorldWatch Institute, 2014.)

KAMPALA

Kampala, Uganda's largest city, has been steadily growing in population. Much of this growth has been situated in Kampala's informal settlements, where 65 percent of the city's population lives. These areas are highly dense, urban communities that spring up organically on undesired land, or wherever there is room. ACTogether, an NGO in Kampala, along with city officials, identified sixty-two informal settlements in Kampala. (Dobson, 2014)

KATWE

One of these slums, Katwe, was first established in the 1980s. Upon 0.5 square miles of squatted land owned by the local catholic church, a community of an estimated 75,000 inhabitant has been established outside of Kampala's formal planning system. This puts Katwe with a population density at 150,000 per square mile. For comparison, the densest neighborhood in Manhattan, the Upper East Side, has a population density of 119,000 people per square mile. These homes are small, 120 square feet, and have an average of five people sharing a single home. (Makindye, 2014)

The informal nature of areas like Katwe require the residents to create their own networks and processes for accessing basic necessities like housing, water, sanitation, food and transportation. For example, plumbing and water was not initially provided to the area by the city of Kampala. But as demand for water grew, the community attached illegally to the city's water main to get water piped further into the slum. Over time, as areas like Katwe grow, these systems, and means of access to these basic necessities, develop into interconnected systems that make the area more livable.

Figure 8 Kampala and Katwe

HOUSING, WATER & SANITATION

Figure 9 Bricks being formed in Katwe

Figure 10 The typical stoop outside homes

Figure 11 Overlooking Katwe Housing

Housing

Buildings and homes within Katwe are made from bricks that are made from the clay, earthen soil on which they stand. The clay is dug from the ground, formed in to bricks and stacked. They are then cured and dried by burning a large log or tree at the bottom of the pile. (Figure 9) The most common material, besides bricks, is the tin metal roofing sheets that are scavenged and reused to make roofing, siding and doors.

In the most recent profile on Katwe, performed by the Makindye Municipality which governs the area, 15,000 dwelling structures exist within Katwe. Through interviews and averaging out the average person per housing unit, they determined an average of five people shared a home. (Makindye, 2014)

Most buildings are rented on a room basis. Units are rented as one, two or even three room units. They do not have in house plumbing systems. These rooms, or units, are used not only for housing, but for shops, restaurants and any other activity. Someone may live in a unit and when they move out the next renter opens a shop in the same space.

The average size of a one room unit, in which an average of five people may live, is about 120 square feet. Double that for a two room unit. Toilets and showers are outside of the home and are shared between different residents within a certain vicinity. Most people share their sanitation facilities with multiple other people. Other activities, such as cooking and washing clothes typically occur in the area just outside the home. As noted before, in 120 square feet there is on average 5 people living in Katwe. Some rooms will have even more people living together.

Figure 12 A child uses a water tap

Figure 13 A typical shared latrine

WATER AND SANITATION

Water is not plumbed into individual units. Instead, water is piped as far into the slum as it can be by the city. The property to which the water is piped takes the responsibility of paying the water bill. This person charges users by the 'jerry can' to cover the costs. It becomes a business for someone while providing the basic need of water to an area.

There are two kinds of water taps in the area, natural spring taps where water is free, and taps that were provided by the city where it is a charge per jerry can basis. (A jerry can hold about 20 liters, or around five gallons.) However, more recently the free taps have become contaminated from sewage and everyone is using the pay taps. During different times of the day, there may be several people gathered around the tap waiting to collect water. The activity of collecting water becomes social as people gather around the water tap or pass each other along the way.

FOOD

Figure 14 Food market in Kampala

Figure 15 Scales of food in Kampala

Figure 14 Food market in Kampala

Figure 15 Scales of food in Kampala

Food

Food can be bought anywhere throughout the slum. Markets, food shops and what might be called convenience stores exist from the hyper-local, tiny shop scale, to the larger, neighborhood-wide and city-wide scale. Food networks in Kampala need to be strong because very few people have refrigerators, making the purchase of food a daily activity.

As you move throughout the city, from directly near your house in Katwe, to downtown Kampala, it seems there is always an opportunity to buy food. While you wait for a mini bus there may be a street vendor or small market to buy a meal. As you walk through downtown Kampala you can grab something to eat along the way from a variety of vendors.

There are many scales of places to buy food. From the small shop near your home to the largest market in Kampala, Owino, where all food from the countryside farming areas first comes. From Owino and other large markets, food is distributed to different vendors througout the city. The following page shows a map of Kampala in relation to Katwe and the different food shops and their scales. (Figure 16)

Figure 16 Food at different scales

TRANSPORTATION

Figure 17 Old Taxi Park | Kampala

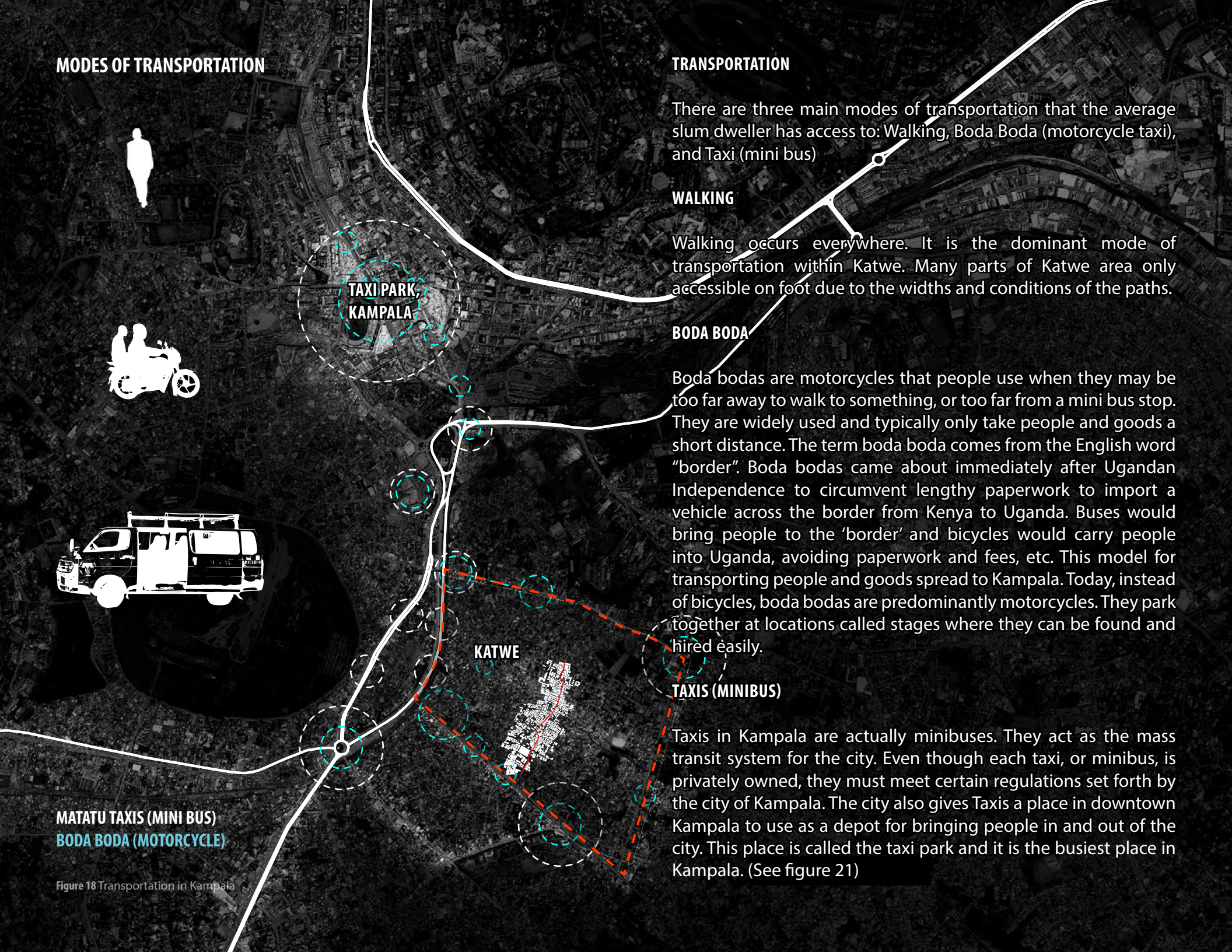


Figure 18 Transportation in Kampala

TRANSPORTATION

There are three main modes of transportation that the average slum dweller has access to: Walking, Boda Boda (motorcycle taxi), and Taxi (mini bus)

WALKING

Walking occurs everywhere. It is the dominant mode of transportation within Katwe. Many parts of Katwe area only accessible on foot due to the widths and conditions of the paths.

BODA BODA

Boda bodas are motorcycles that people use when they may be too far away to walk to something, or too far from a mini bus stop. They are widely used and typically only take people and goods a short distance. The term boda boda comes from the English word "border". Boda bodas came about immediately after Ugandan Independence to circumvent lengthy paperwork to import a vehicle across the border from Kenya to Uganda. Buses would bring people to the 'border' and bicycles would carry people into Uganda, avoiding paperwork and fees, etc. This model for transporting people and goods spread to Kampala. Today, instead of bicycles, boda bodas are predominantly motorcycles. They park together at locations called stages where they can be found and hired easily.

TAXIS (MINIBUS)

Taxis in Kampala are actually minibuses. They act as the mass transit system for the city. Even though each taxi, or minibus, is privately owned, they must meet certain regulations set forth by the city of Kampala. The city also gives Taxis a place in downtown Kampala to use as a depot for bringing people in and out of the city. This place is called the taxi park and it is the busiest place in Kampala. (See figure 21)

Figure 19

Figure 20 Taxi conductor hand signals describe their destination


Figure 21 Satellite Image of Old Park (Google Earth)

There are no designated taxi stop locations. People walk or boda boda to a road where taxis run and there hail a taxi much like in any other city. Fifteen people legally fit into these minibuses, though there is often more, and fare is calculated by how far the trip distance was. There is a conductor in the mini bus that mans the door and collects the fare payment. Most taxi routes are taking people into and out of downtown Kampala. The Taxi Park acts as a transportation hub where people can transfer to another taxi that will be traveling to the area they need to go.

To know what direction the taxi is going, hand gestures that the conductor give out the window that inform the direction they are going.

Just as there is no designated bus stop to find a taxi, there is no designated place to stop, either. A person just informs the conductor that they want to get out and they signal to inform the driver to pull over where they would let the person out and try to fill the newly vacant seat.

CONCLUSIONS

Housing, water, sanitation, food and transportation are all interconnected systems. Houses do not have plumbing within them, so people rely on access to water and sanitation outside the dwelling. To get food to Katwe requires different modes and ways of transporting it there. This is facilitated by the taxis and boda bodas. Activities such as food and transportation, water and food, housing and sanitation conglomerate together in the same space.

In many ways, it is the lack of access to basic amenities that makes Katwe successful on a social level. Most activities that would otherwise be private, occur in public space. Cooking, washing clothes, getting water, using the bathroom and anything else occurs in the public realm. So, while Katwe on paper may lack the basic amenities of water, sanitation and food access, the inhabitants of the slum still access these things. They just do so in a more public manner. Because people do not have to their own water tap, does not mean that they do not have access to water.

Due to the public nature of accessing these amenities, the streets and paths and alleys of the slum allow the chance of constant interaction with people. As people do mundane daily actives like fetch water, buy food, walk to the bus stop, or use the bathroom, it requires them to be in the public realm, activating the public spaces.

This research of in Kampala focuses on the public realm and the activities that occur within it in Katwe. Namely, water, sanitation, food and transportation. The spatial analysis will focus on the spaces surrounding these activities from the local scale, to the scale right outside a person's front door, to the city-wide scale. The private life of a slum dweller ends at their doorstep. Most activities that would be private in other areas of the world become part of the public realm. This creates chances for social interaction and active public space. By mapping and analyzing these activities, ways in which the Katwe slum functions is revealed.

CHAPTER THREE: KATWE AND THE "SPACES IN-BETWEEN"

Figure 22 Local path in Katwe

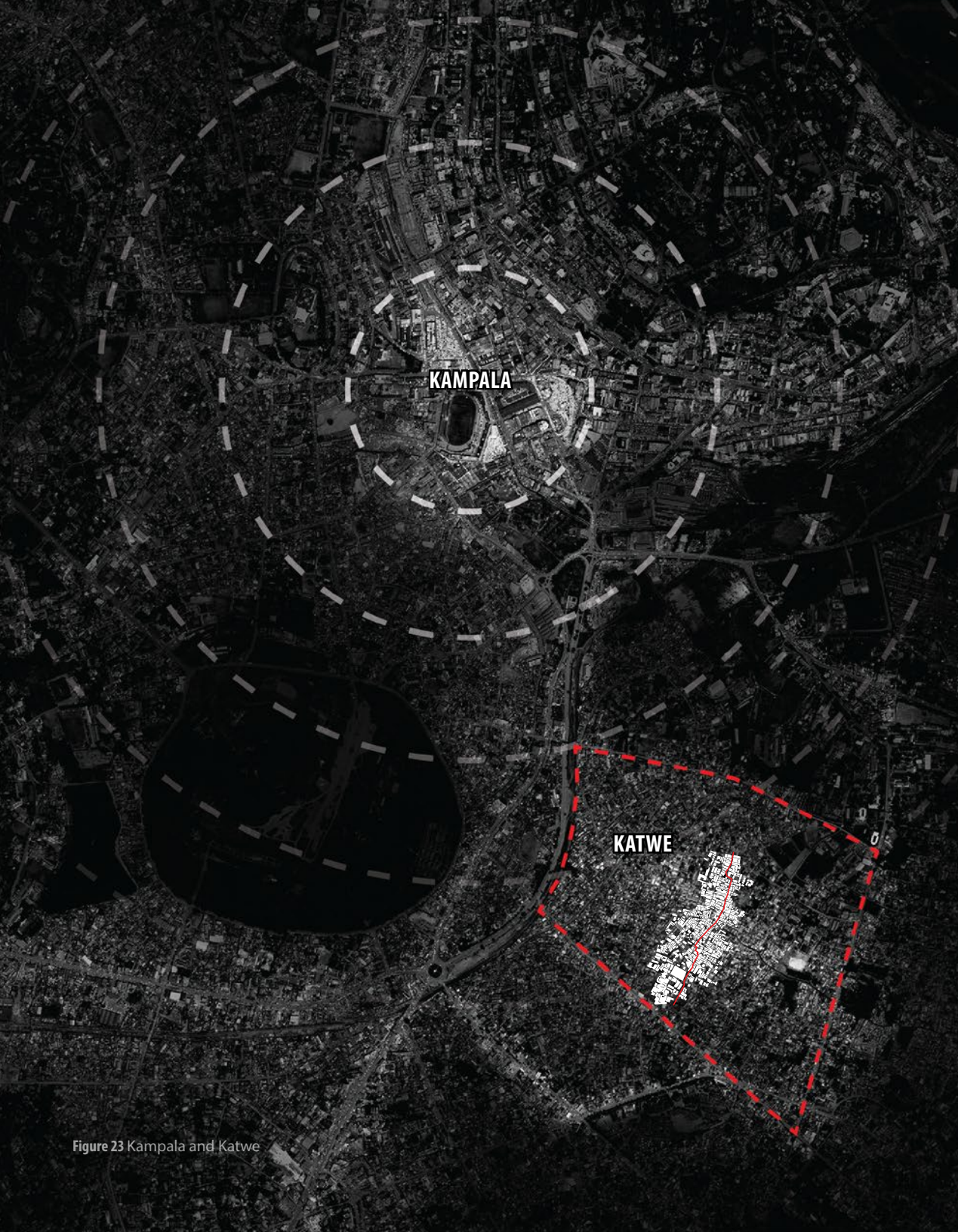


Figure 23 Kampala and Katwe

Learning from Katwe requires a deeper understanding of how it functions. To do this, a visit to Kampala and to the slum of Katwe was undertaken. The goal was to map, photograph and document the general activities that occur in Katwe, namely: Water, sanitation, food and transportation and how they influence the urban fabric of Katwe. Alongside mapping, social interactions and interviews look place with members of the Katwe community and local leaders.

The goal of the mapping was to gather data points and spatial relationships of different activities on different scales. Those scales were broken down as follows:

1. The local vicinity of a group of residences.

2. The neighborhood vicinity within the boundaries of Katwe.

3. Katwe as it meets the formal city of Kampala.

4. The relationship of activities and space within the larger city of Kampala

METHODOLOGY, PROCEDURES AND ANALYSIS

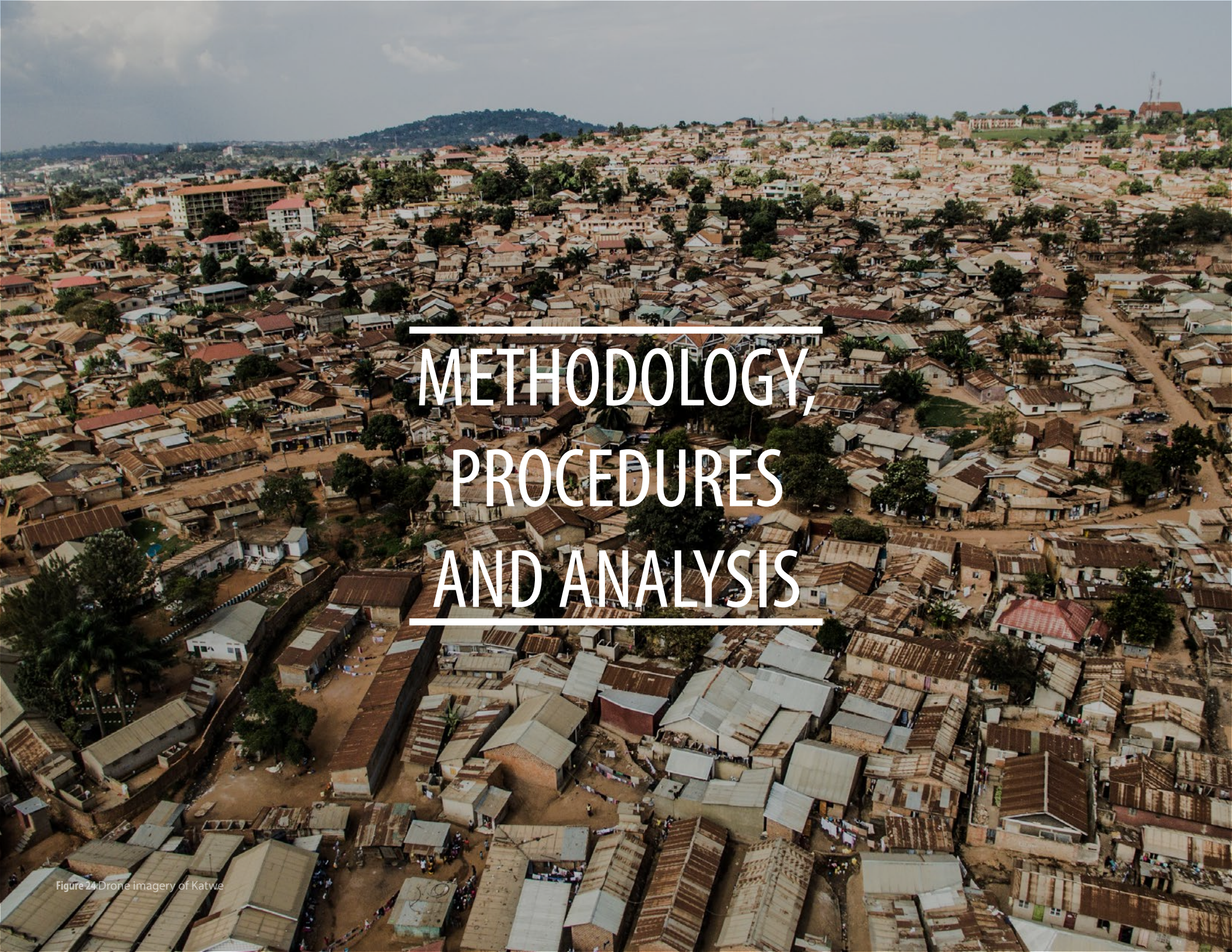


Figure 24 Drone imagery of Katwe

Figure 25 iPhone 6

Figure 26 DJI Phantom 3 Drone

PROCEDURES AND METHODOLOGY

SMARTPHONE

Today, people rely on their smartphones to help them get from place to place. People's phones know their exact location on earth at all times. Documenting and mapping important points and locations in Katwe was done using a smartphone, technology readily available even to residents of Katwe. It was surprising at how well Google Maps and Open Street Maps worked in Kampala to facilitate navigating the city. The goal was to use a smartphone to keep track of where things were, what routes were taken to walk through Katwe, and other important locations. As well, every photo taken on the smartphone would be geolocated to the exact location where it was taken. Using a smartphone in this way allows immediate documentation that could be assembled to create maps and analyze spatial relationships after the trip was over.

AERIAL DRONE

An aerial drone was brought to gather high resolution and more up close aerial views of Katwe. Satellite views do not provide enough detail to examine the relationships between individual homes and buildings. Like the smartphone, the aerial drone geolocated images and videos so the exact locations could be used in later on analysis

INTERVIEWS

While in Katwe, conversations and interactions with local people helped guide the documentation. It was surprising to hear from so many people that there biggest struggle was not in dealing with water or sanitation or even housing (all the things that supposedly make a slum a slum), but instead people were more focused on having stable incomes and maintaining social relationships and proximity to family and loved one. These interviews revealed some interesting things regarding the residents' view of Katwe.

Figure 27 Jaja and her daughter

Figure 28 A happy John Bosco in his room

One lady, who only went by the term "Jjaja" (jaw-jaw), a general term of respect for an older women in the local language, shared a one room unit with six members of her family comprised of her children and grandchildren. Jjaja knew everyone that walked by her house. If she did not recognize them, then they must be visitors or new to the area. She was very dependent on this social interaction that occurred outside her home. When she asked about what living in the city in America was like, a generic apartment building was described: "a tall building with possibly hundred of people living in it". She then assumed that everyone in the building new each other, just like in her neighborhood. When she was informed that it was actually very likely that no one in the building knew each other well, she could not imagine living in such a place of social isolation.

Another person, John Bosco, was asked what he would change about his community if he could. Would it be better access to water and sanitation? Improved drainage and sewers? A better house? His reply was a job. He then added, "if all of these things were upgraded and improved like you asked, I could not afford to live here." His main reason for living in the slum was that it was all he could afford, "it is better than living in the streets."

Most interactions revealed similar attitudes toward life in Katwe. Life was hard, but people knew each other and shared resources together. The space outside the front door was where public and social interaction took place. Most people were not thrilled about their economic status or stress in finding a job. However, Katwe seemed to be a place that they thought provided the opportunity for them to be more successful. It was a place to live. To a lot of people who were not born in Kampala, life in Katwe was better and provided more opportunities than the rural, village areas they had left.

GEOLOCATING DATA

Upon returning to Seattle, these geolocated images would serve as bread crumbs of the paths and areas that were traversed and documented while in Katwe. The exact location of images is embedded into the photo's metadata and can easily be seen in reference to one another on a map within the photo app on the smartphone as well in most photo organization software for computers.

Alongside the photos were notes and wayfinding markers that were inputted into the phone to pinpoint locations.

Upon returning to Seattle, the extraction and analysis of the spatial data collected in Kampala was undertaken. The result of the methods and procedures used was a map of different photos, notes and pins that could be represented to understand the relationship between the different activities that were the focus of data collection in Katwe: water, sanitation, food and transportation.

This data was used to produce maps and diagrams at different scales. Ranging from the most local part of Katwe to the city wide scale of Kampala.

KAMPALA
KATWE
LOCATION POINTS

Figure 29 Geolocated photos

KATWE AT THE LOCAL SCALE

Figure 30 Drone Imagery of Katwe

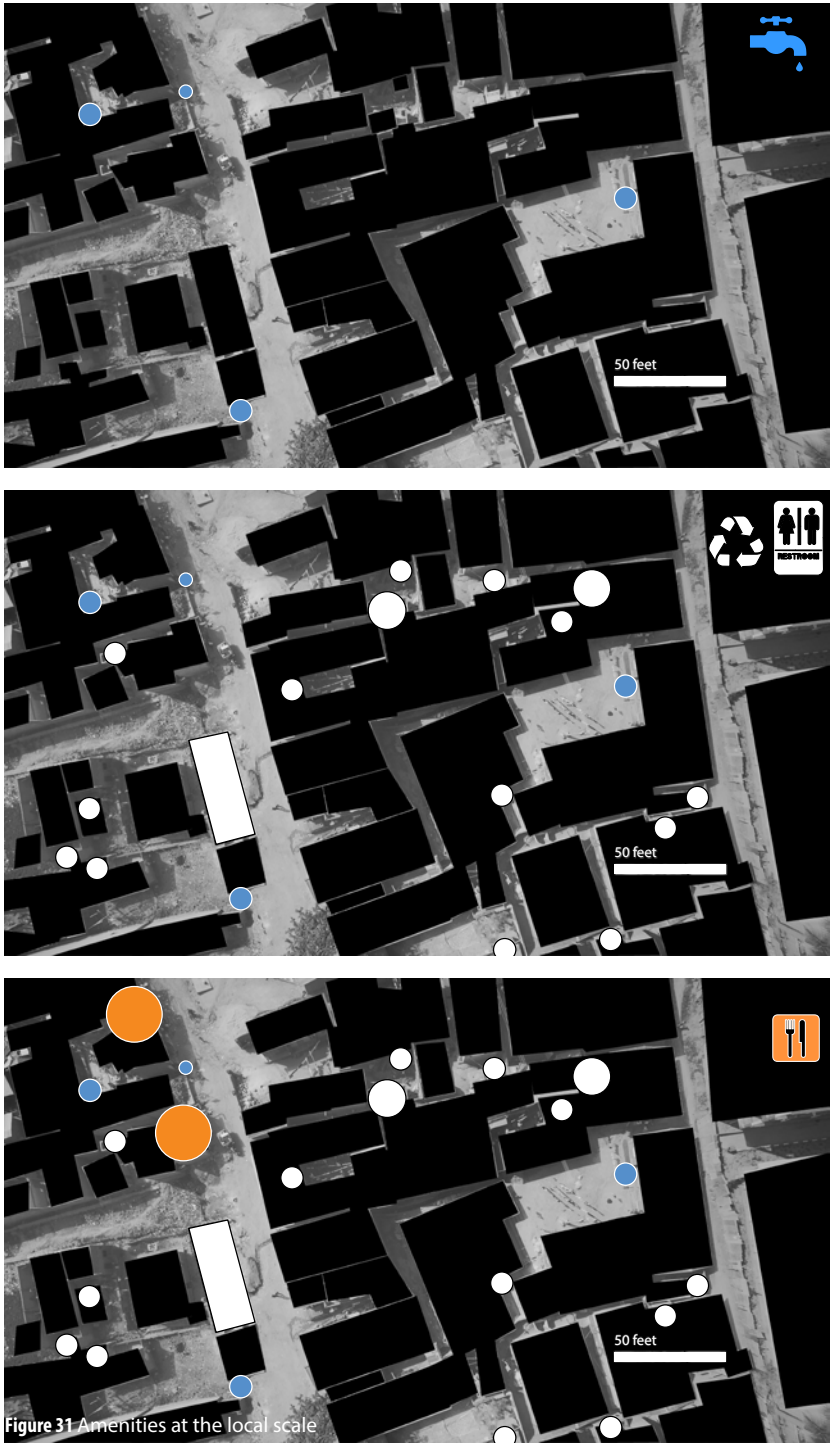


Figure 31 Amenities at the local scale

THE LOCAL SCALE

WATER

Water taps are sporadic throughout Katwe. One tap may serve anywhere from tens to hundreds of people. These water taps require movement and activity to occur throughout Katwe. They also become social places to meet and interact with people who live in the community.

SANITATION

Groups of homes share access to sanitation. Because all of these activities occur in the public realm, the movement of people between their homes and these areas creates paths throughout the slum. These activities are interrelated and in certain places, occupy and overlap the same space.

FOOD

Within a short walking distance from nearly every home in Katwe there is a small shop to buy the basic necessities like soap, tea, flour, rice and sweets. It is within this same vicinity that people tend to access a public water tap.

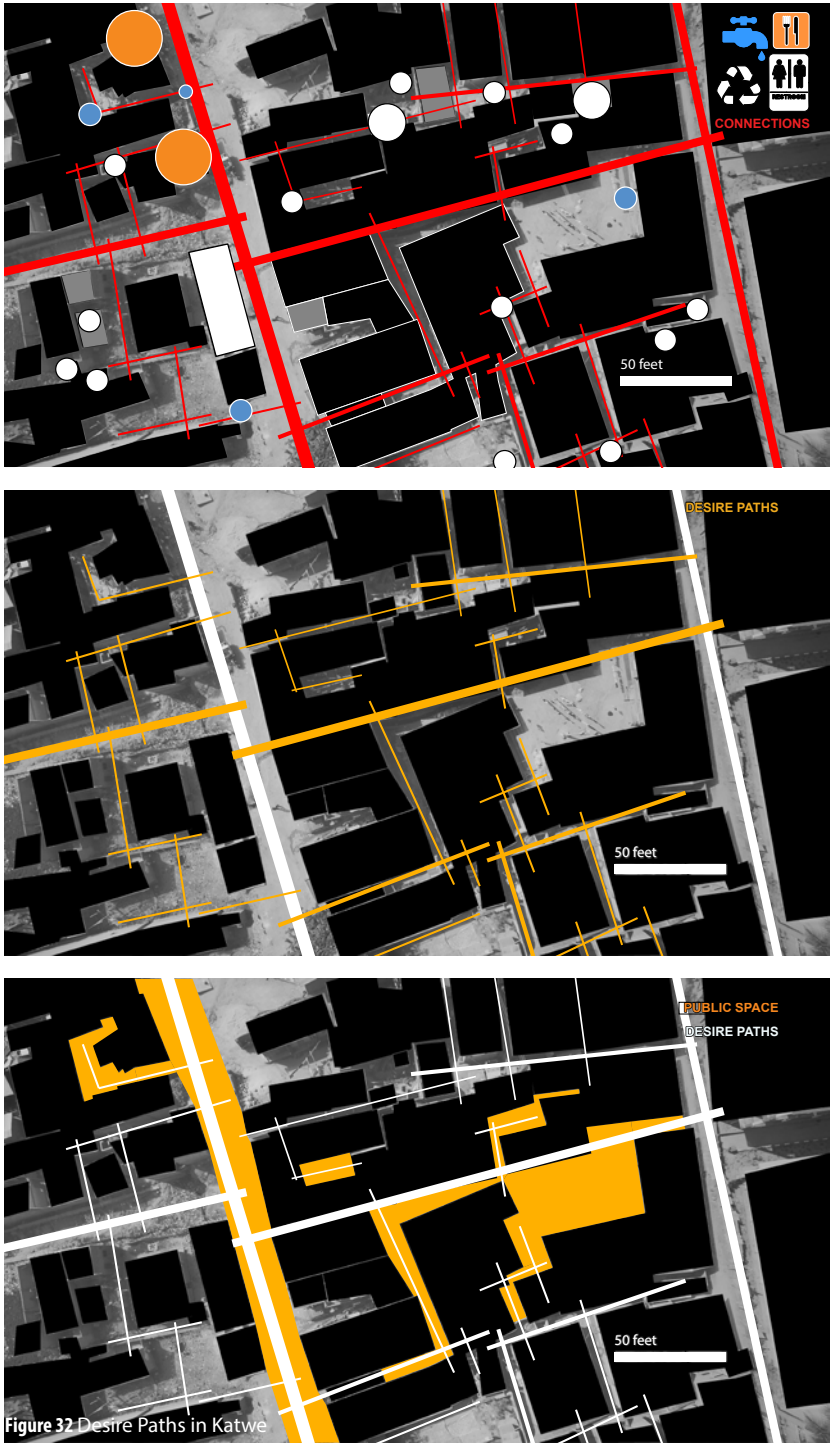


Figure 32 Desire Paths in Katwe

PEDESTRIAN CONNECTIONS

At this most local scale, the only mode of transportation is pedestrian traffic. In the spaces in-between homes and buildings, small pathways exist. These pathways are 5-10 feet wide and seem to meander and twist in randomness. However, these paths exist to reduce distance and provide direct routes. If there is room to move through, people will.

DESIRE PATHS

These paths do not follow a regular grid system. They do not seem to have any rationale to their direction other than they are where people need to move to get to where they are going. These "desire paths" exist to facilitate movement from home to outside activities. At times they open up to larger, more open spaces where more people can gather together. These small scale paths exist right outside the home. Besides being paths, they are also a collective 'front yard' for residents. These paths serve as a kitchen, a laundry room, a restaurant. It is within these small, local paths where life occurs. (Figure 33)

These are the most intimate paths in Katwe. While still being public, these paths are semi-private because they are mainly used by the residents that live in the vicinity.

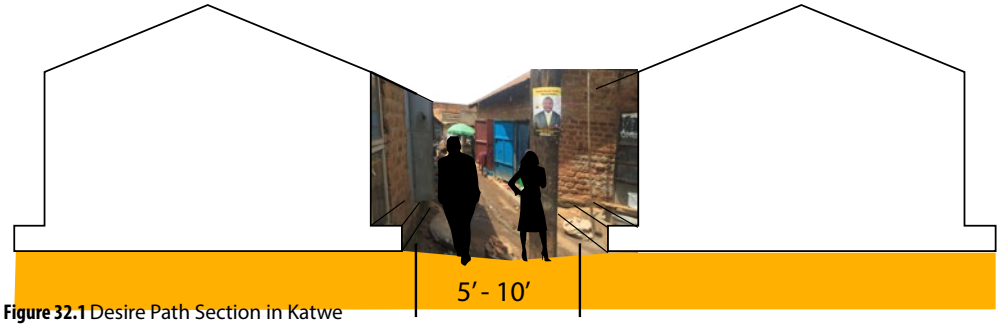


Figure 32.1 Desire Path Section in Katwe

Figure 32.2 Paths as space

KATWE AT THE NEIGHBORHOOD SCALE

Figure 33 Woman on Boda Boda

Figure 34 Neighborhood scale pathways

Just as tributaries flow together to create to a larger river, so do the small, local, desire paths flow into the neighborhood scale paths. These small paths funnel into larger passageways that are 15- 20 feet wide. The paths facilitate access in and out of the most dense parts of Katwe.

Here, there is a mix of modes of transportation. Pedestrians, bikes and boda bodas share the road. More business tend to exist on this scale as this path leads you to the boundary, or the border of the slum. Here the public use of the road is less about personal activities like cooking or access sanitation, but more about larger scale activity related to small businesses, shopping, food and other forms of commercial activity. Some of the most common businesses are food shops, street food vendors, cell phone charging and repair, sewing, water taps, restaurants, and public cinemas where people gather to watch movies and sports via satellite TV.

Figure 34.1 Neighborhood scale pathway section

WATER
FOOD
NEIGHBORHOOD PATH

Figure 35 Neighborhood scale amenities

CELL PHONE CHARGING

CINEMA W/ SOCCER SCHEDULE

NEIGHBORHOOD SCALE FOOD

KATWE TO KAMPALA: THE INFORMAL CITY MEETS THE FORMAL

Figure 36 Boda Boda Stage

THE KATWE BOUNDARY: WHERE THE INFORMAL MEETS THE FORMAL

Katwe is bordered by formal streets that are part of the transportation network of Kampala. It is on these streets where one can access the informal taxi mass transit system. Here is where in the informal community of Katwe begins to merge with the formal areas of Kampala. The use of the road occurs at a much larger scale. Cars, taxis, motorcycles (boda bodas), pedestrians and street vendors all inhabit these roads.

This mix of traffic creates a vibrant mixed use space. Taxis drop and pick up people center of Kampala; of boda bodas, that carry people and goods in and out from the deeper parts of Katwe to these fringe areas. There is also a large mix of pedestrian traffic, all sharing the same street space with taxi and bodas. There are no cross walks or sidewalks. At this boundary, goods like food are brought from the city center of Kampala to be distributed to smaller shops throughout Katwe.

The fact that taxis, bodas and pedestrians all inhabit the street at the same time says a lot of how to can rethink what streets are and can be. Even the larger streets surrounding Katwe are for more than just cars, they are flexible and allow for a variety of uses.

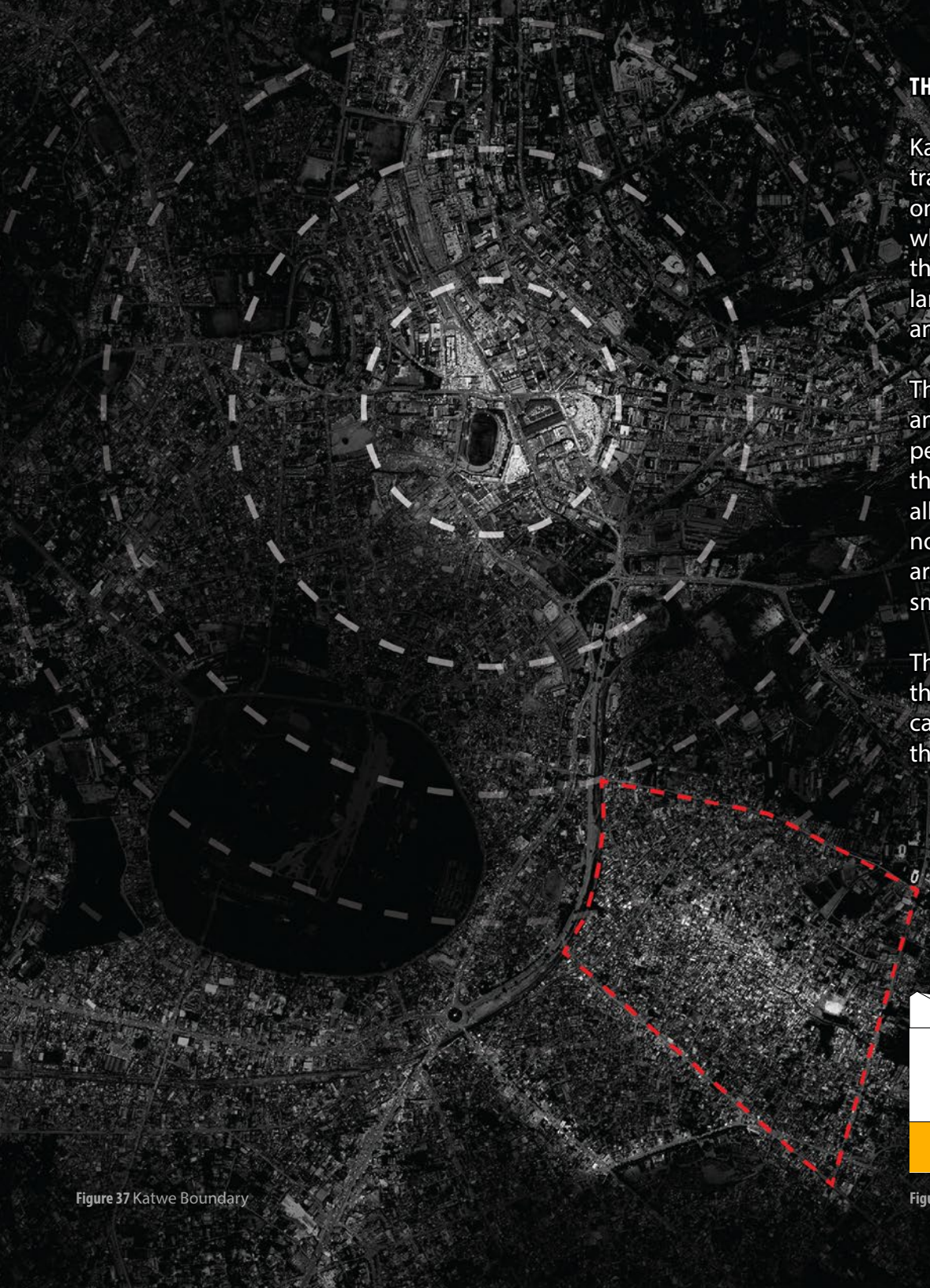


Figure 37 Katwe Boundary

Figure 37.1 Katwe Boundary Street section

Figure 36 Boda Boda Stage


Figure 14 Food market in Kampala


Figure 38 Katwe Boundary Places

THE KATWE BOUNDARY: WHERE THE INFORMAL MEETS THE FORMAL

The the left are Images showing a Boda Boda stage where drivers wait for passengers. These passengers will likely be people who arrive to the border of Katwe via taxi and need a ride toward the center of the slum.

Food markets here are at a larger scale. They are places of exchange where fresh food is brought from the city center of Kampala to be sold and distributed throughout Katwe.

The streets are wide, people walk in the middle of them. When a car, motorcycle or taxi comes through, the pedestrian move to the side and out of the way.

The buildings spill out into the street. The only barrier between the road and the structure is a small step. The buildings that face the street are open and porous. In-between these building are desire paths that allow circulation behind these buildings and into other areas of Katwe.

THE CITY SCALE

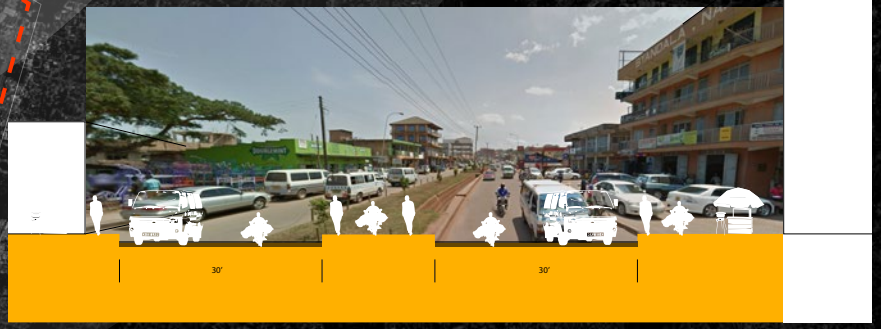
Figure 39 The City Scale

THE CITY SCALE

As Katwe is fully left behind on the way to the city center, the scale of the street is that of a four lane road, with two lanes in each direction. Not much different from a high or wide traffic corridor found in most cities. Here, vehicles dominate. Large scale shops and food markets exist here. These roads serve as main corridors that bring people and goods into and out of the city.

KAMPALA

KATWE



1/2 mile

Figure 40 `The city scale path

Figure 40.1 The city scale path section

INTERCONNECTED USES

The diagram to the left highlights the different, active public spaces by category: Taxi, Boda Boda, Food (markets, shops, restaurants) and commercial areas. The size of the circle highlighting the area indicates intensity of use and scale.

These activities rarely exist in isolation. Transportation, food and commerce occupy and share the same space. Buying food occurs on your way to hail a boda. As you get dropped off from the taxi, it makes sense that there is food market and boda boda driver waiting for you. The largest markets are located near the transportation hubs in downtown Kampala.

The scales of these spaces change as well. At the city wide scale, large populations of people come together in certain areas and the space responds. The closer to the city center a person gets, the larger the scale of the paths and spaces that house daily activities in Kampala.

TAXI
BODA
FOOD & COMMERCE

Figure 41 Food & Transport Spaces

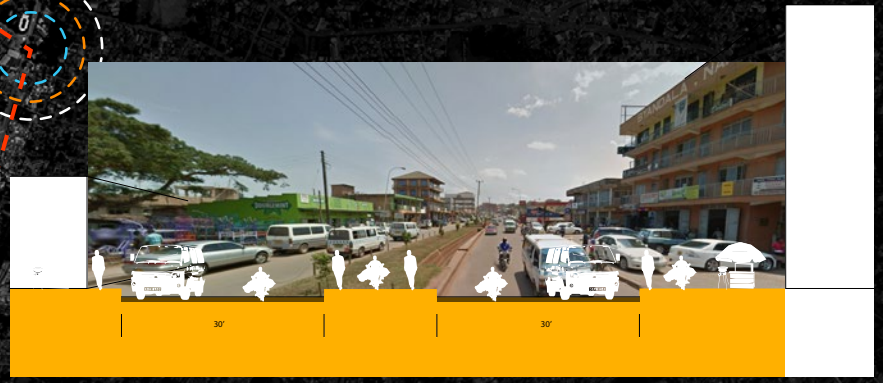


Figure 40.1 The city scale path section

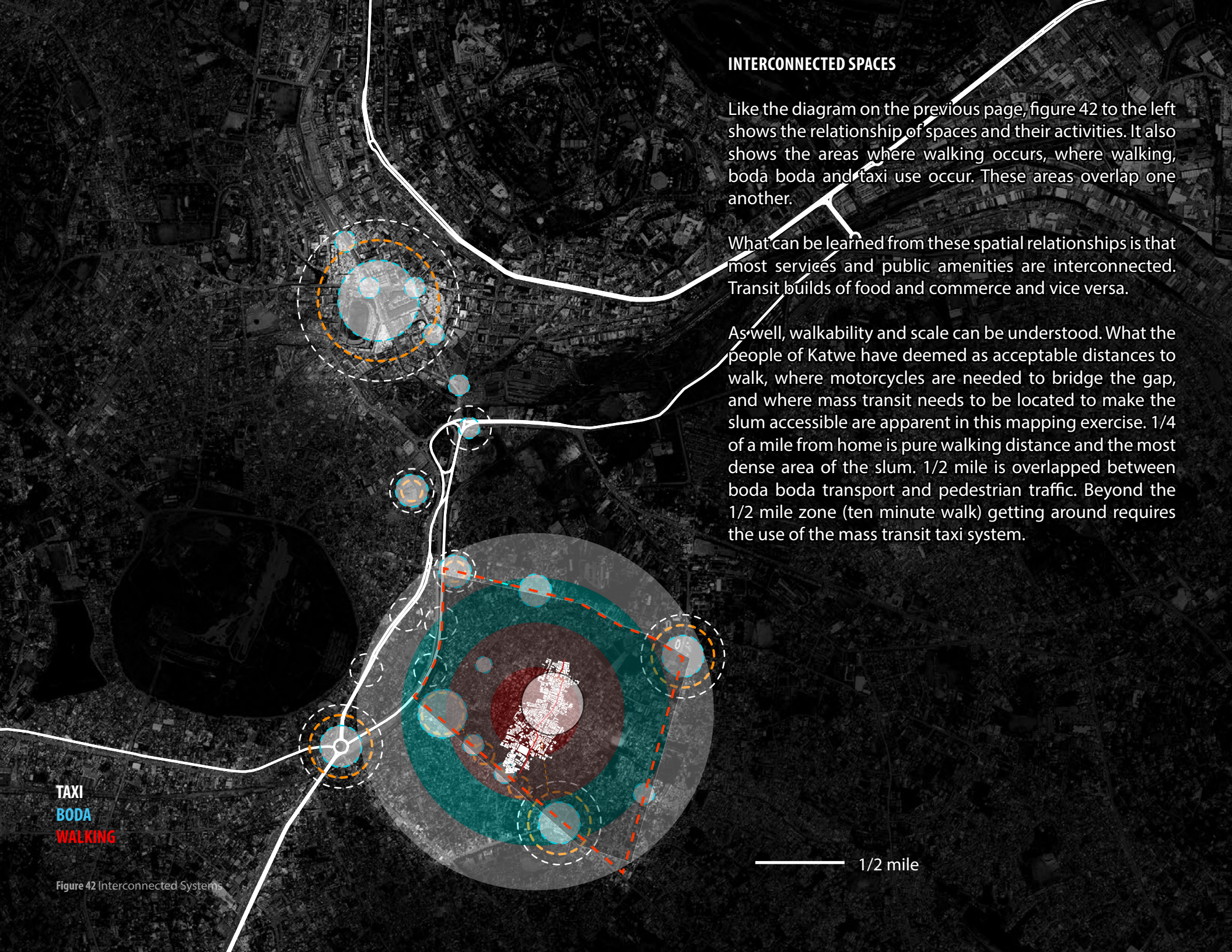


Figure 42 Interconnected Systems

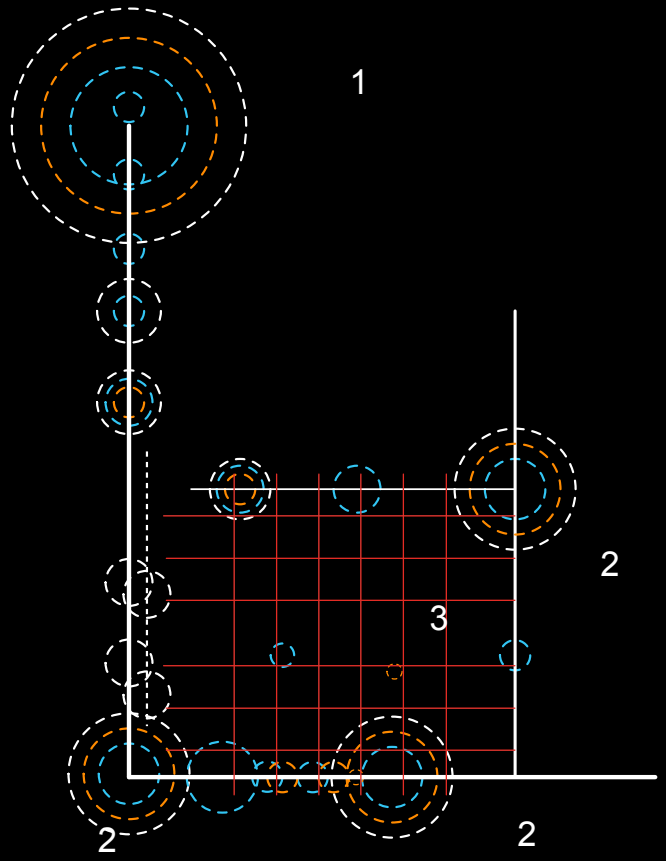
INTERCONNECTED SPACES

Like the diagram on the previous page, figure 42 to the left shows the relationship of spaces and their activities. It also shows the areas where walking occurs, where walking, boda boda and taxi use occur. These areas overlap one another.

What can be learned from these spatial relationships is that most services and public amenities are interconnected. Transit builds of food and commerce and vice versa.

As well, walkability and scale can be understood. What the people of Katwe have deemed as acceptable distances to walk, where motorcycles are needed to bridge the gap, and where mass transit needs to be located to make the slum accessible are apparent in this mapping exercise. 1/4 of a mile from home is pure walking distance and the most dense area of the slum. 1/2 mile is overlapped between boda boda transport and pedestrian traffic. Beyond the 1/2 mile zone (ten minute walk) getting around requires the use of the mass transit taxi system.

SCALE OF SPACE IN KAMPALA



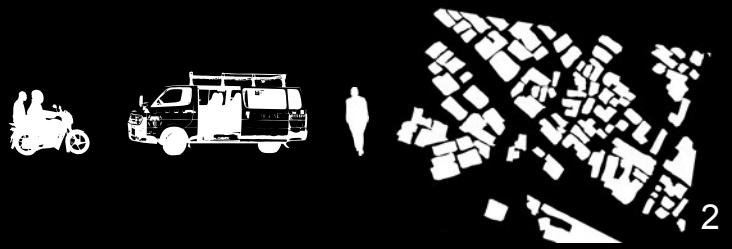
TAXI
BODA
FOOD
WALKING

Figure 43 Scales of Space | Kampala

PLACES FOR CARS, PLACES FOR ALL, PLACES FOR PEOPLE

There are different scales in throughout Kampala that allow for different types and intensities of use. As one gets closer to Kampala, the uses become more public.

In the city Center, activity is most intense and scales of the street are favored to vehicular traffic.



At the border of Katwe, the activity of the slum meets the city. With a variety of uses allowed, people, cars and boda share the road.

The smallest scale allows local activities like water and sanitation and cooking, while almost strictly becoming a pedestrian only zone.

500 FEET

“A LOGIC TO IT ALL”

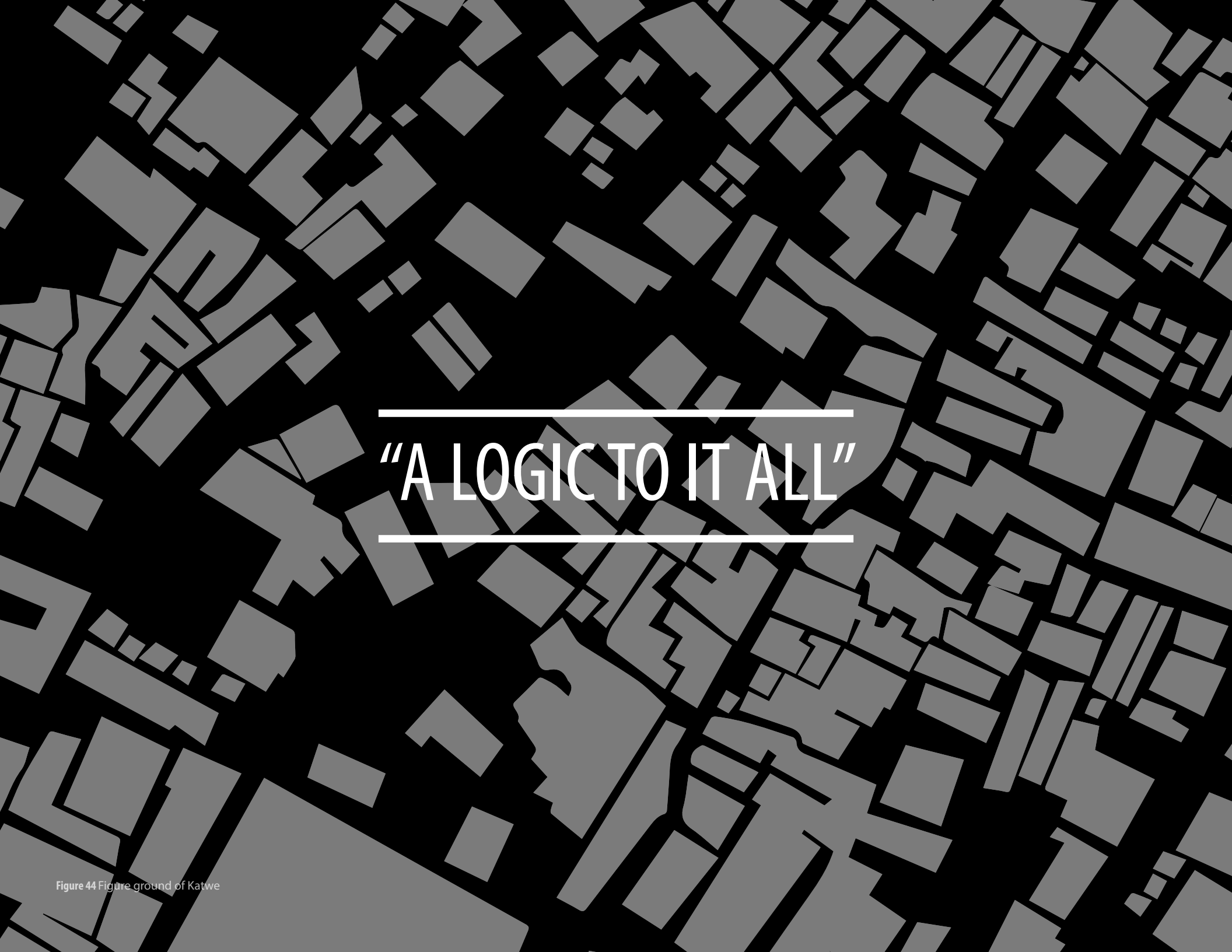
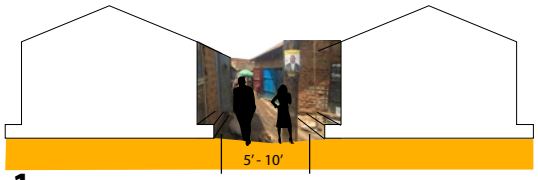


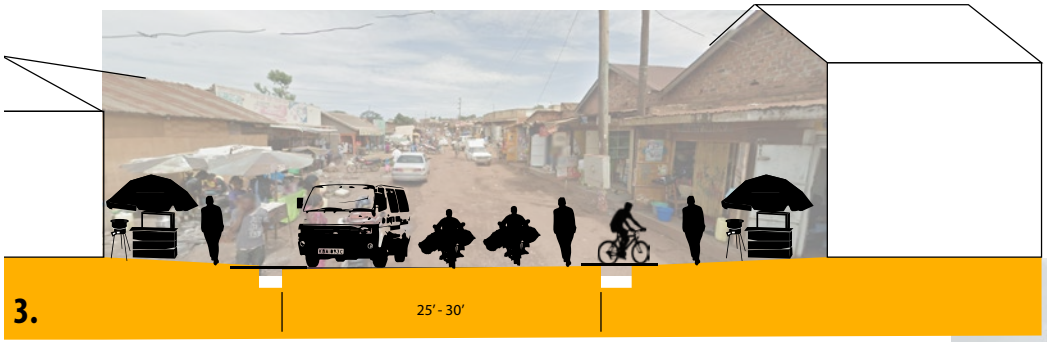
Figure 44 Figure ground of Katwe

FOUR SCALES OF PATHS



1.

2.



3.

4.

Figure 45 The four paths

CONCLUSIONS - THE SCALE OF THE PATH

In Katwe, different spaces call for different uses. There is not one street or road typology for the area. Instead, there exists a gradient of paths from the local to the city scale. As has been discussed, these have been broken down into four paths that allow a dense, urban community like Katwe to function:

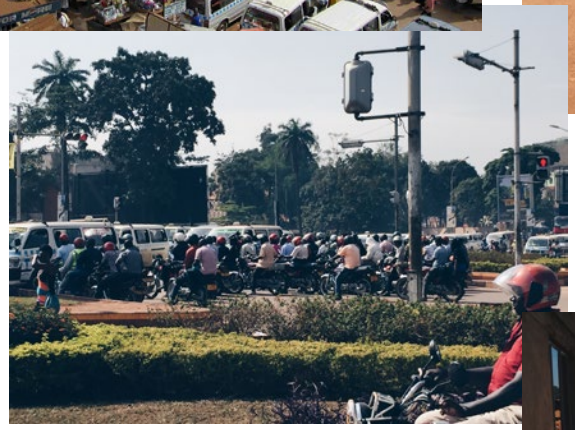
1. THE LOCAL SCALE: In-between homes, pedestrian only. Most private.
2. THE NEIGHBORHOOD SCALE: Pedestrian and Boda boda. Semi-private / public.
3. KATWE BOUNDARY: Formal mixed with the informal. Food, transportation, pedestrian mixed use. Public.
4. THE CITY SCALE: Car / Taxi / Vehicle dominant. Most public.

These paths and streets are more than thoroughfares and walkways. They become part of the public realm and are utilized as public space. Streets are for more than just cars. Streets and roads become a 'place'. The moment someone leaves their home they are in one of these paths. Life happens in these spaces in-between.

PATH SCALES: KAMPALA -> KATWE










Images, from left to right, of the different types of a person would encounter as they moved from downtown Kampala to Katwe

Figure 45 Images of paths

POROSITY | DESIRE PATHS

Elevation of buldings at boundary scale of Katwe.

Desire paths in-between buildings

Desire paths in-between buildings & building entrances.

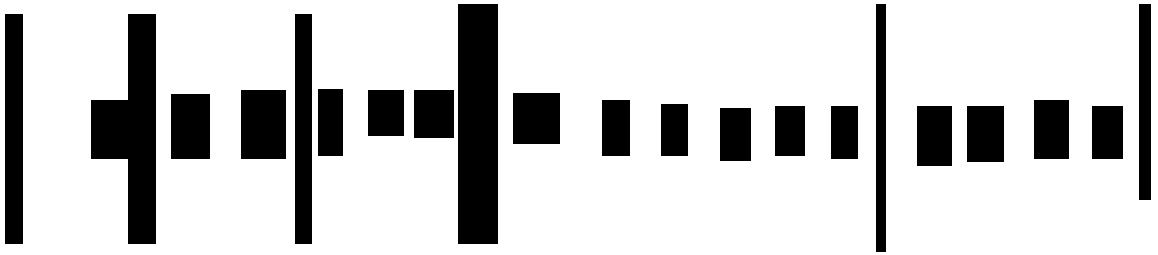


Figure 46 Porosity Diagram

CONCLUSIONS - POROSITY

"If you plan cities for cars and traffic, you get cars and traffic. If you plan for people and places, you get people and places."
- Fred Kent

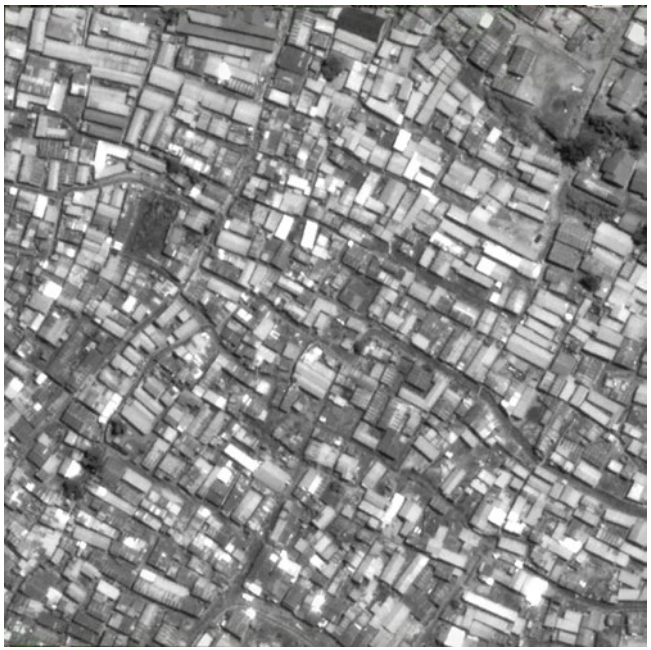
Katwe was not planned by a municipality or city planning office. Urban designers and architects were not involved with its development. It was designed by its inhabitants. It developed over time, responding to the needs and of the people who live there; growing and expanding as needed.

One of these needs is the need for extreme walkability in Katwe, as no one who lives there owns a car. The desire paths that have been created allow for someone on foot to walk just about anywhere...**The options for walking through Kampala's slums like Katwe are endless. The options for driving through them are extremely limited.**

Activities that occur in buildings in Katwe seem to spill out into the street. Buildings are extremely porous. They allow easy access to the interior as well as through and around them. Even on the largest and busiest streets and roads there is always space between buildings to allow movement through and behind. This porosity of Katwe contributes to its walkability and accessibility. These paths make it possible to live in a community where no one owns a vehicle.

Katwe is more than a place where people lack access to secure housing, water, sanitation, food and transportation. Yes, life is difficult living in a

POROSITY | DESIRE PATHS



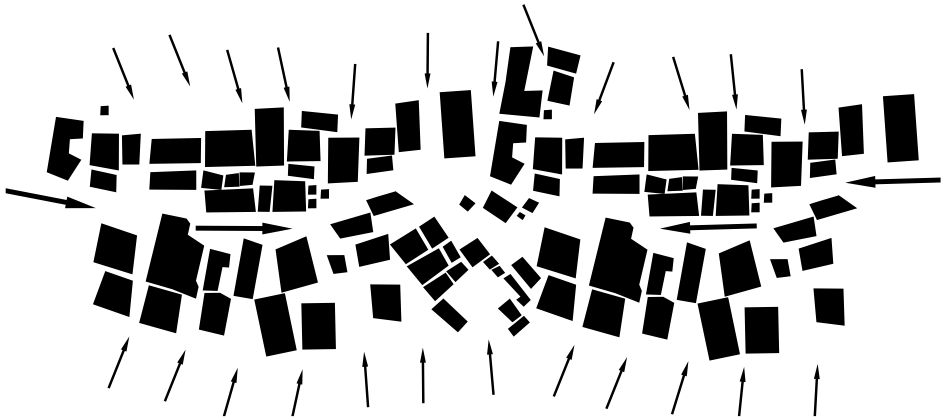


Figure 47 Porosity Diagram II

slum. However, if places like Katwe are ever to be improved, they need to be understood. Their weaknesses are apparent, but their strengths need to be uncovered, because it is these strengths for which to build and improve slum areas like Katwe.

Beyond what Katwe is lacking, it has many amazing strengths. When looked at and analyzed differently, Katwe is actually quite successful, especially when considering the fact that it is an unplanned community. Its organization, scale and parameters were determined by the collective group of people who live there. **Katwe is a dense, walkable community where the pedestrian is dominant.** The scale of buildings in Katwe are to the pedestrian scale. The density that exists is accomplished by low-rise, single story buildings.

The combination of paths, porosity and density makes Katwe successful from a walkability and accessibility point of view. From the moment someone leaves home, they are in a path and a place. By the scale of the path a person finds themself in, they can know where they are. The denser and smaller the path, the closer to the center of Katwe. The wider and more public the path, you are moving toward to city center. In Katwe, life exists not in its buildings and structures, but in the spaces in-between them.

Many cities are looking to improve their denisty and walkability. There is a transition in many urban areas from car dominated development to transit oriented development. Perhaps then, architects, urban planners and citiy governments in other places around the world can use some of the principles of organization in places like Katwe as inspiration to promote walkability and density in their cities.

CHAPTER FOUR: KAMPALA TO SEATTLE

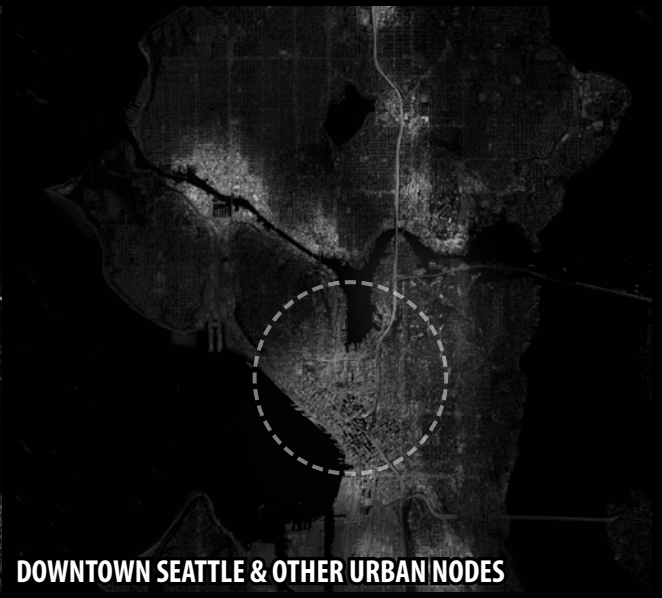
To test the results of the research and analysis from Katwe, this thesis uses some of the principles uncovered in Katwe as inspiration for creating a more walkable, dense neighborhood in Seattle, Washington. The findings that will fuel this investigation in Seattle are that of porosity, density, walkability, and scales of paths that facilitate these requirements.

The rationale for selecting a site in Seattle mirrored the way Katwe was analyzed. However, instead of moving from the local to the city-wide scale, this analysis moves from the city-wide scale to the local scale to determine an appropriate area for Katwe's inspiration to be implemented and tested in Seattle.

Figure 49 Seattle Satellite View

THE CITY SCALE

Figure 50 The City Scale | Seattle



THE CITY SCALE

A satellite view of Seattle reveals where its density exists. Its urban nodes are able to be highlighted and seen almost immediately. These urban nodes are centers for urban growth throughout the city.

Seattle currently has a light rail line that connects the downtown area with SeaTac Airport. Currently, construction is underway for a new light rail extension that will provide easier access between downtown and the northern part of Seattle.

One of the future locations of the Link Light Rail expansion is in the Roosevelt Neighborhood just north of Seattle. Roosevelt is located two miles from the University of Washington and five miles from downtown Washington. Accessing both of these locations from Roosevelt will be shortened immensely due to the light rail. It is less than ten minutes to University of Washington and fifteen minutes to downtown Seattle.

Currently, a lot of development is occurring around the future light rail stop location in Roosevelt. The land on which the light rail station will be located is under construction and much of the land adjacent to it is under redevelopment as well. This growth is replacing low density, single-family houses with higher density, mid-rise apartment buildings.

Figure 51 The City Scale Analysis

THE ROOSEVELT NEIGHBORHOOD: THE MISSING "IN-BETWEEN"

Figure 52 Wall Mural in Roosevelt Neighborhood

ROOSEVELT | SEATTLE

The Roosevelt Neighborhood's is centered on the intersection of NE 65th Street and Roosevelt Way. Roosevelt Way is a major north-south corridor in which heavy vehicular traffic passes through the neighborhood. This area is the most dense part of the neighborhood where big block apartments, restaurants, bars and a grocery store exist.

Just north of this intersection is where the Link Light Rail Roosevelt Station is being constructed. Redevelopment of the neighborhood is occurring around this light rail station, which opens in 2021. Four large apartment buildings have been completed in the area in the last year and a half, with three more set to begin construction.

Figure 53 Roosevelt | Seattle

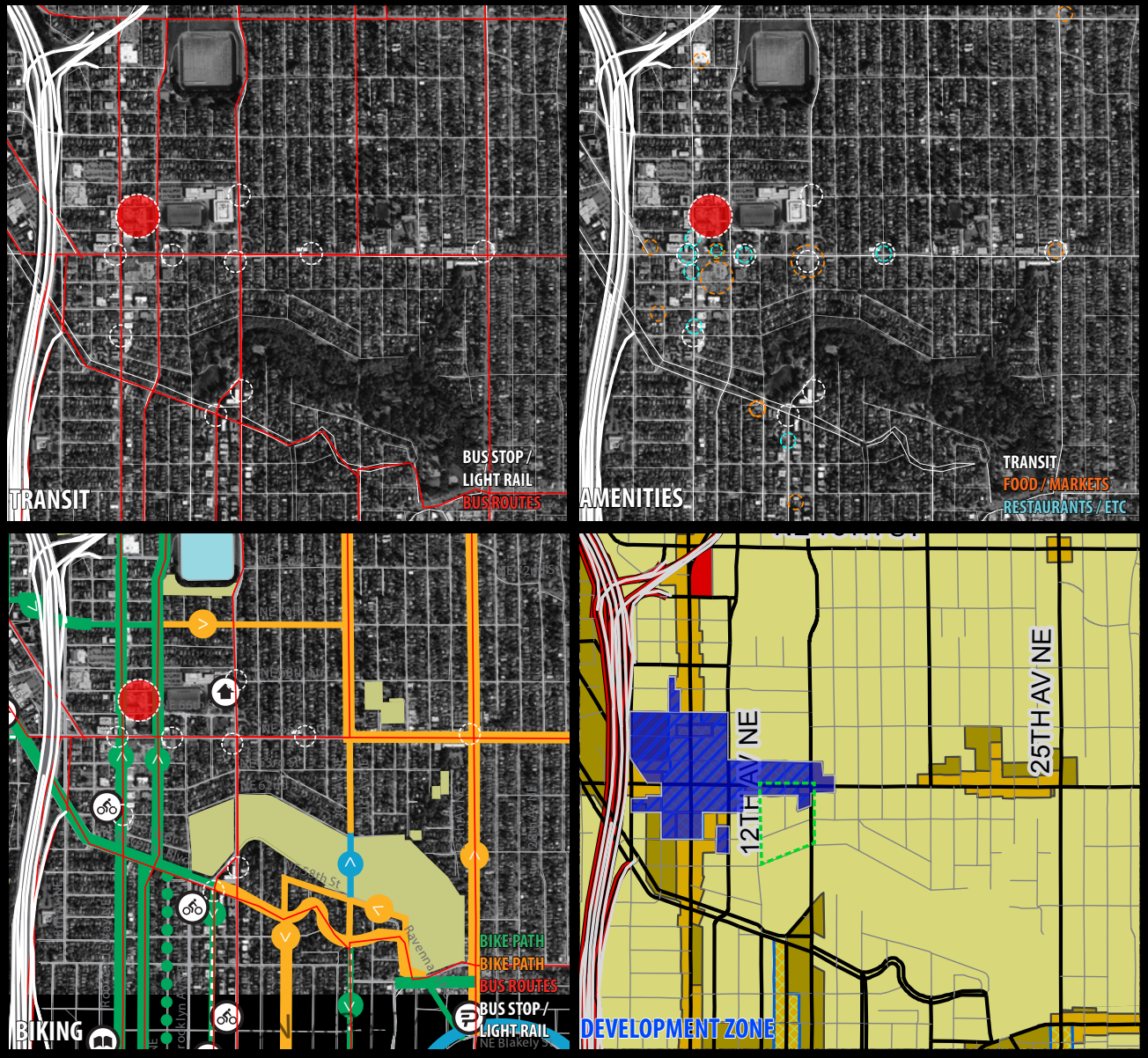


Figure 54 Roosevelt Analysis

NEIGHBORHOOD AMENITIES

Analysis of the Roosevelt Neighborhood was done to reveal the accessibility, amenities, and zoning allowances for the area.

Even without the anticipated light rail, the neighborhood has ample mass transit access via the many bus stops and bus routes that are focused along Roosevelt Way and 65th Street, connecting the neighborhood to different parts of the city.

Roosevelt Way and other main corridors are typical, wide streets that facilitate vehicular traffic with sidewalks on the side. Along these sidewalks are neighborhood commercial spaces, bars, restaurants and a variety of stores.

Aside from vehicular traffic, there are several bike paths that pass through the area. These paths provide an alternate scale of transportation and tend to occur on the less busy streets.

The zoning in the area is mainly single-family. In the center of Roosevelt, along Roosevelt Way and 65th Street, higher density uses are allowed. The density of these zones is intensified within the development zones.

Figure 55 Current Development | Roosevelt

DEVELOPMENT IN ROOSEVELT

The neighborhood is undergoing a transition from single family neighborhoods to multi-family, mid-rise buildings. Groups of single family residences are assembled and purchased by developers to be redeveloped into more dense, multi-family buildings. This is providing a lot of new homes and urban density to the area.

The transition from single family residential creates abrupt density changes. In Roosevelt, it is common to find a 120 foot tall apartment building that can house 400 people next door to a 25 foot tall home that houses 4 people. This trend of replacing single-family housing with multi-family housing in the neighborhood is likely to continue until these low density residences within the development zone are completely replaced. However, at the border between the development zone and single-family zoned areas, the abrupt differences in use, heights and density will continue to exist.

The development zone surrounding the light rail is also a designated incentive zone by the city of Seattle. This incentive zone appendix to the existing zoning adds incentives for property developers. Extra height and floor area limits are increased if they provide a portion of the extra units as affordable housing.

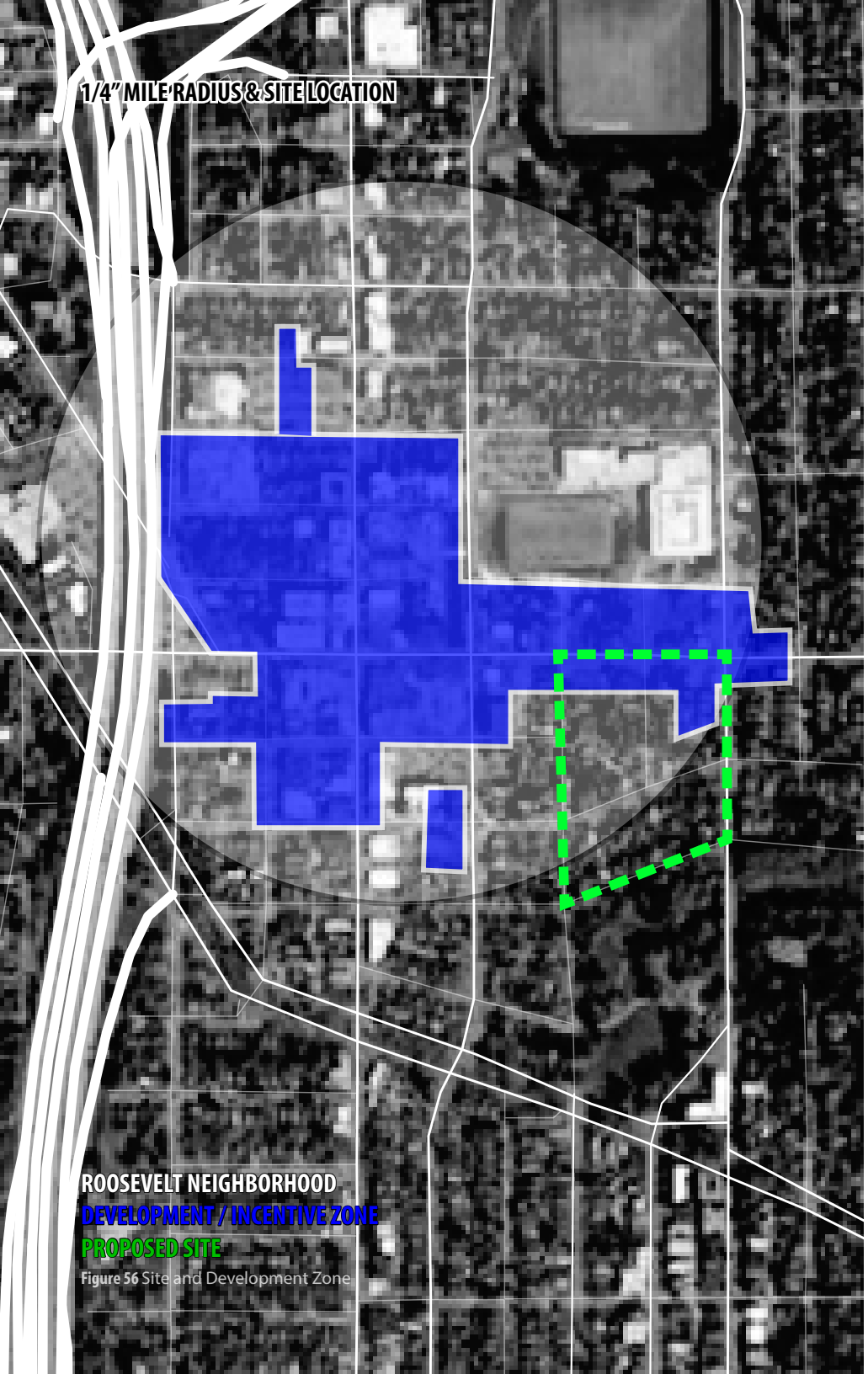


Figure 56 Site and Development Zone

WHAT IS THE ALTERNATIVE? IS THERE AN "IN-BETWEEN"?

With the focus on redevelopment in the Roosevelt Neighborhood, single-family housing in the vicinity of the new light rail station will be replaced by higher density, mixed use, multi-family apartment buildings. Due to the zoning in the area, there is no buffer or gradients in scale and use between the border of the development zone and the existing single-family zoning. Perhaps there is a way to increase the density and mixes of use of the single family neighborhoods directly adjacent to the dense urban development areas of Roosevelt.

Using the lessons learned from Katwe in Kampala, can the area between these zoning scales be occupied and densified in a different manner? Like Katwe, there could be a gradient in density of the neighborhood.

The proposed project is to visualize how a single-family neighborhood could be more intensely occupied. The goal is to adapt and utilize a single-family area near the core of Roosevelt in a similar manner as Katwe. This will create an in-between scale of density between single-family and big block housing development. Creating a gradient in density can allow for more land to be occupied at a variety of densities and uses.

The site area for the intervention is a single-family neighborhood located one quarter of a mile east of the light rail stop and center of Roosevelt. It is bordered to the north and east by 65th Street and 15th Avenue, respectively. The existing single-family neighborhood structure will be occupied more intensely, increasing the floor area ratio (F.A.R.) of the area. A shift in focus from car scale access to walkability and pedestrian access is possible due to the proximity of bus stops, light rail and other neighborhood necessities. This in-between scale will be depend on multiple scales of paths to facilitate movement, walkability and the creation of new, collective public spaces.

A NEW SCALE

Figure 57 Katwe overlayed on Seattle

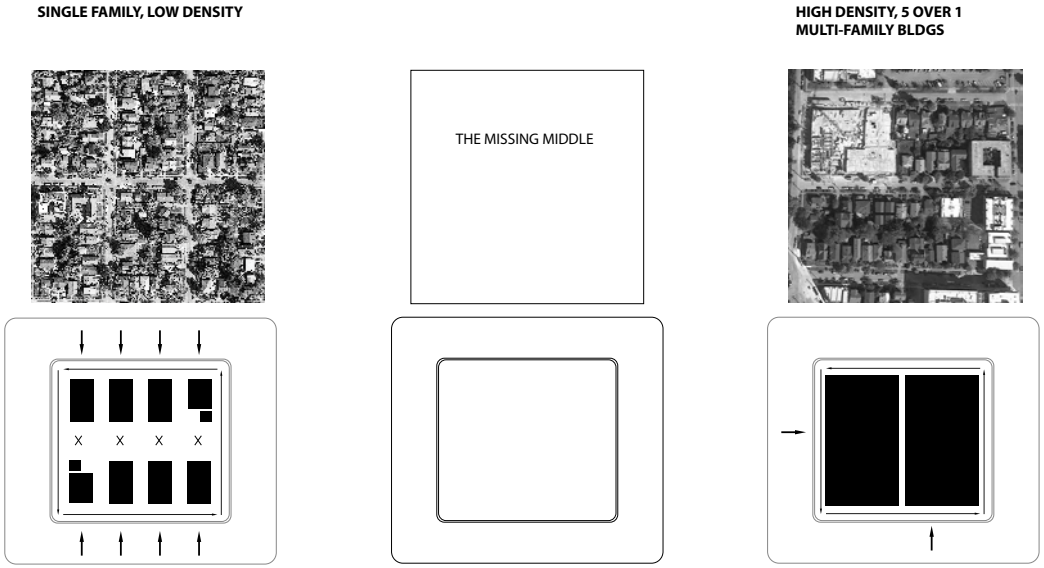


Figure 58 The In-Between Scale

THE IN-BETWEEN SCALE

Current building typologies, whether single-family or multi-family development, lack porosity for pedestrians in Seattle. Single family properties tend to be fenced off, with pedestrians on sidewalks walking the same distance and adjacent to cars. The shear size of multi-family buildings block access through the blocks. If there is an alley between the buildings, it tends to be used for parking garage access and garbage collection. In both examples, walking and driving exist side by side.

As learned from Katwe, for maximum walkability there needs to be an increase in pedestrian porosity that will facilitate the creation of desire paths to promote walkability, ease of access to the area on foot, and provide public social space.

Figure 59 The In-Between Scale II

THE IN-BETWEEN SCALE

Katwe is extremely dense. This new, in-between scale in Roosevelt will not be nearly as dense as Katwe. However, it needs to be more dense than the existing single-family neighborhood. Occupying the land needs to be more intense to create a gradient of density between big block development and traditional single-family housing. Density is also important to promote walkability and get people on the streets and paths of the neighborhood.

Currently, Seattle's single family neighborhoods occupy the land with a F.A.R. of less than 50 percent. This is low due to large quantities of open space and large roads for automobiles. The open space in these areas are mostly private, intended for the use of one family.

In slums like Katwe, the F.A.R. is much higher, around 80 percent. This is because the land is used very intensely and the scales of the paths are smaller and adapted for pedestrians, not cars. Open space is shared and becomes part of the public realm.

APPLICATION AT THE LOCAL SCALE

Figure 59.1 Application at the local scale

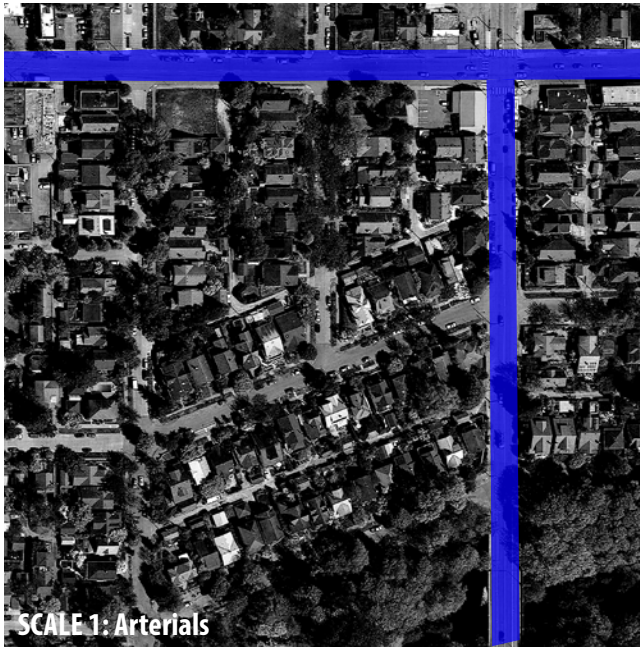


Figure 60 Existing street network

Existing Streets & Alleys

The existing roads in the neighborhood are predominantly used for vehicular traffic. In this site area of Roosevelt there are three different types of roads and streets with a range of scales. The largest scale, is 65th street to the north and 15th Avenue to the east. These are shown in blue and are main arterials.

The second kind of street scale are typical Seattle residential roads. These roads usually have cars parked on both sides of the road, with a single lane of traffic in the middle that serves both directions. These streets function better as a parking lot for residents' cars as it requires one car to pull over and wait if there is another vehicle approaching from the opposite direction.

The smallest scale streets are back alleys that pass through the center of the blocks. The backyards of homes face these alleys. These streets are used to access backyard garages, to park, and as a place to keep garbage, recycling and compost cans for pickup.

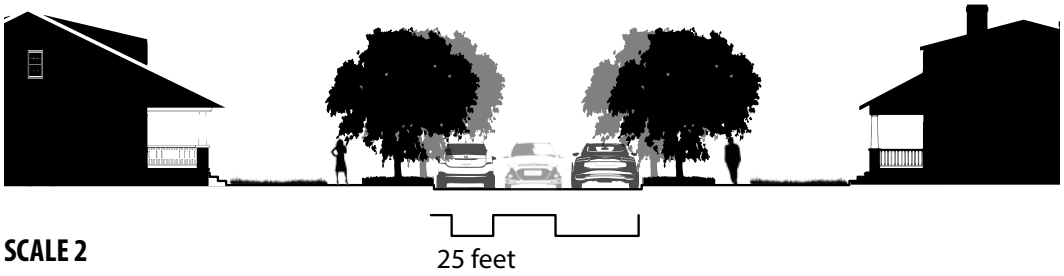
These streets provide a framework in which to build a more walkable community in Roosevelt. To promote walkability, these streets will be adapted and changed to hold a variety of uses focused on pedestrian traffic. With increased density, these paths will become the shared open space for the area.

Existing Streets & Alleys

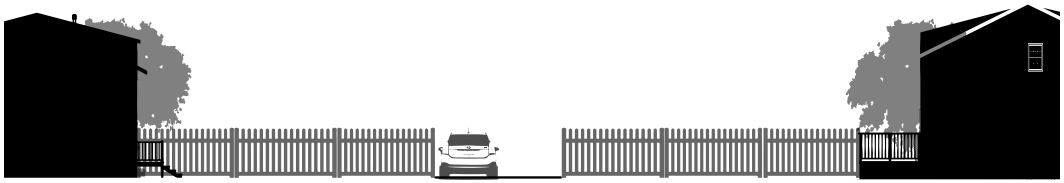
On this page, there are street sections and images that document the current state of the existing streets and alleys. For this project, the arterial scale of paths will remain unchanged, continuing to allow vehicular traffic around and through Roosevelt.

The residential streets will be modified and adapted to promote walkability and create open space in the area. The alleys will become places where the public and private life merge, much like the local paths of Katwe.

SCALE 1



SCALE 2



SCALE 3

Figure 61 Existing Street Network II

OCCUPY THE LAND MORE EFFICIENTLY

The next series of slides show an example of occupying the land more efficiently and creating density from existing private space. There is an elevation of the homes as viewed from the street. There is also a plan of the area showing two rows of houses with an alley in-between. Current structures occupying the alley are primarily garages. Finally, there is a long section through the area to diagram the changes.

Currently, pedestrian porosity does not exist because of the fences that enclose people's backyards. With a change in use to the area, or a change in zoning to allow it, structures could be built to occupy the current backyards of residences. These new building could serve a variety of uses, not limited to the typical accessory dwelling units (ADUs) that are allowed in some areas. Private fences would need to be removed to allow the creation of desire paths and provide a porosity to allow density and walkability on the street, through the block, and between buildings.

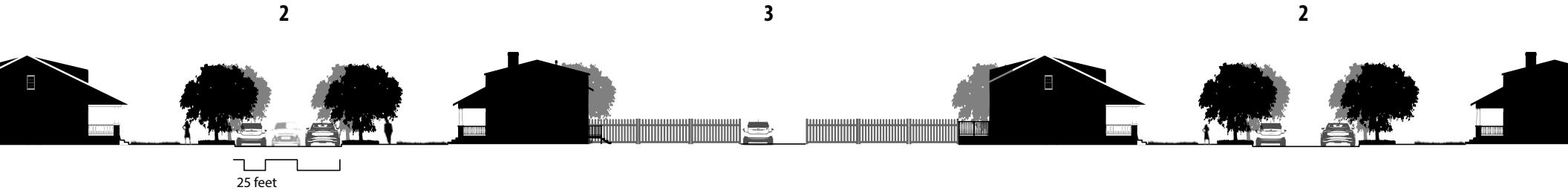
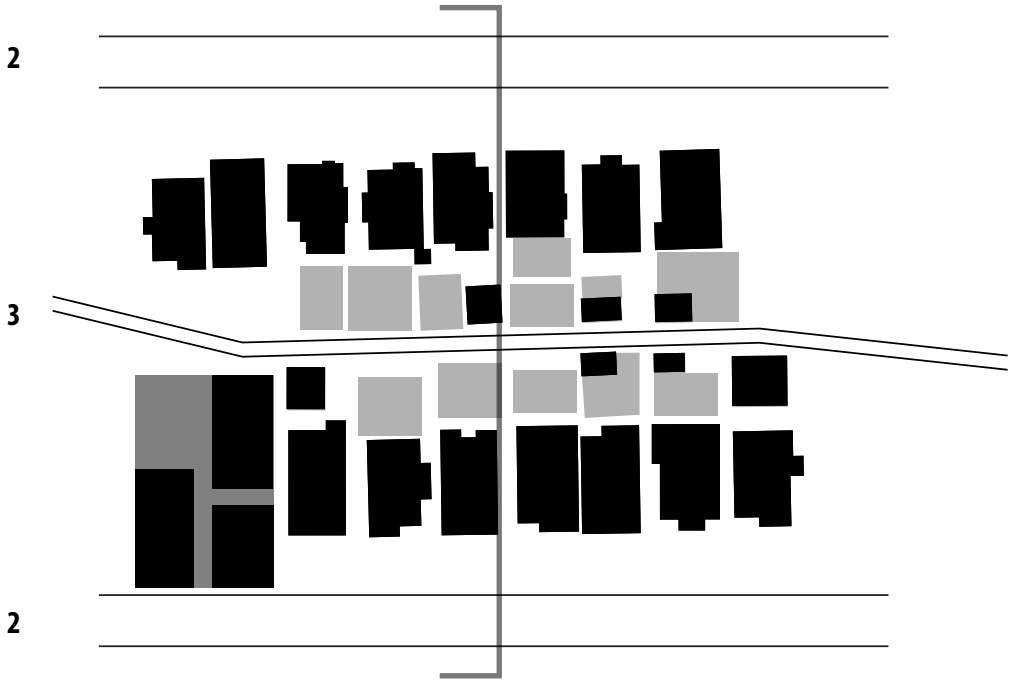


Figure 62 Current Conditions



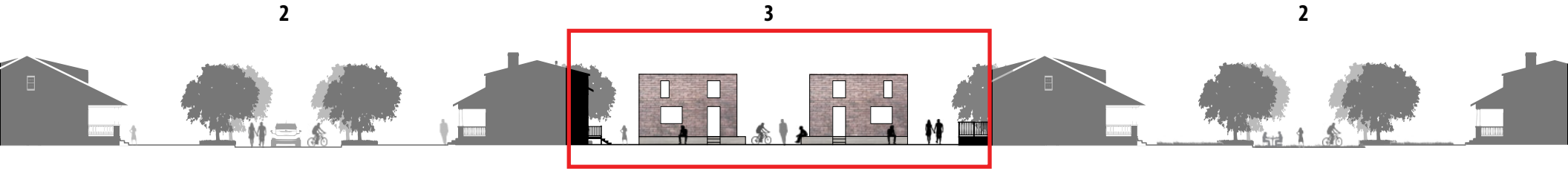


Figure 63 Alleys Occupied

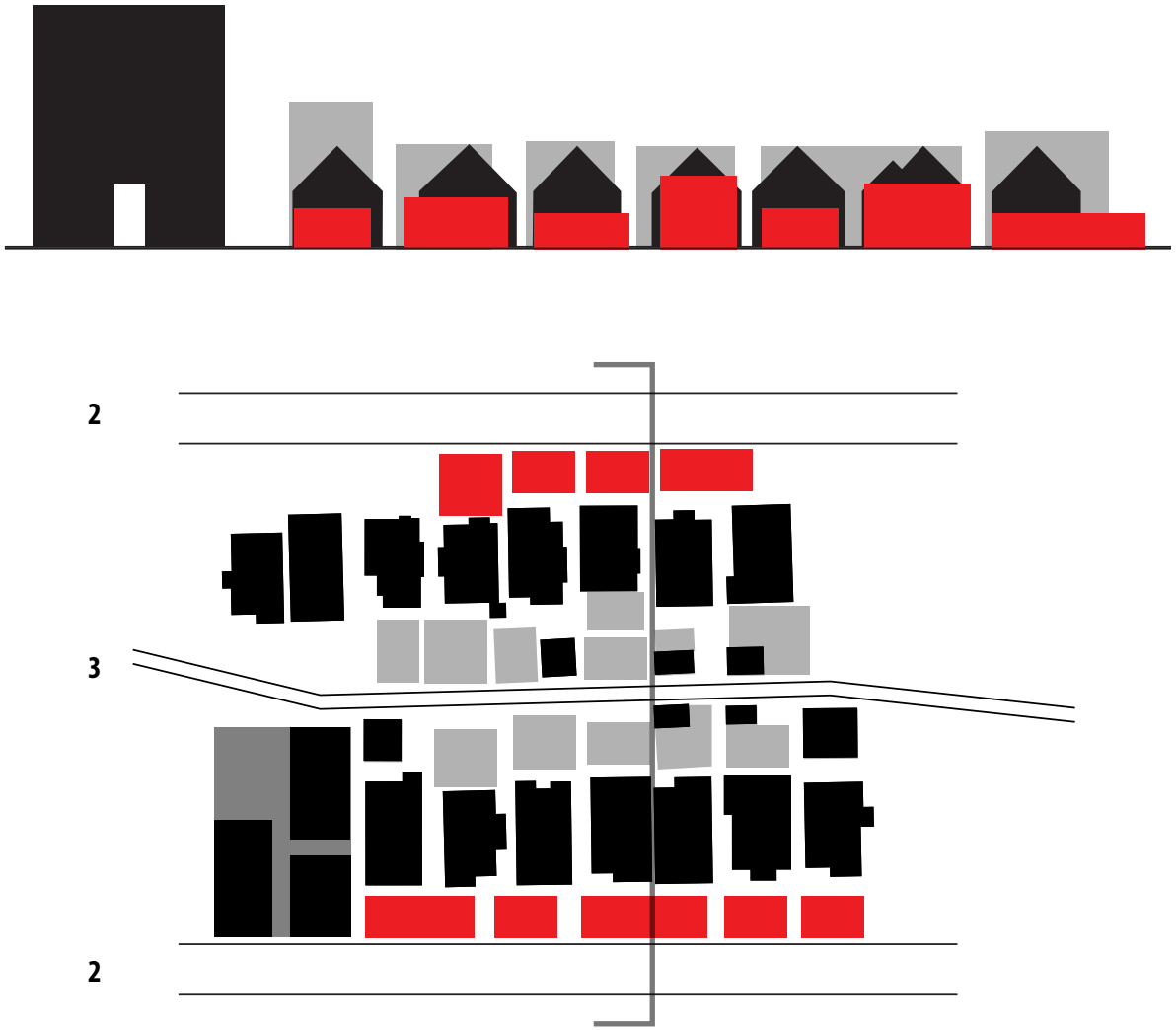
OCCUPY THE LAND MORE EFFICIENTLY

As homeowners begin development and construction of units and structures in their current backyards, extra density will be created. The use of the alleys will shift from car use and parking, to pedestrian use and public space. The alleyway can become occupied by housing, restaurants, coffee shops and any other uses.

With the private fencing removed, there is an increase in pedestrian porosity. Small pathways between homes allow access from all directions and provide the framework for the creation of desire paths.

OCCUPY THE LAND MORE EFFICIENTLY

With increased density and occupation of the land, a smaller scale of path is created, the desire paths. These will exist between homes, buildings and other structures that will be built in the area. What used to be someone's side yard, becomes a passageway through the block, facilitating direct walking paths throughout the area.



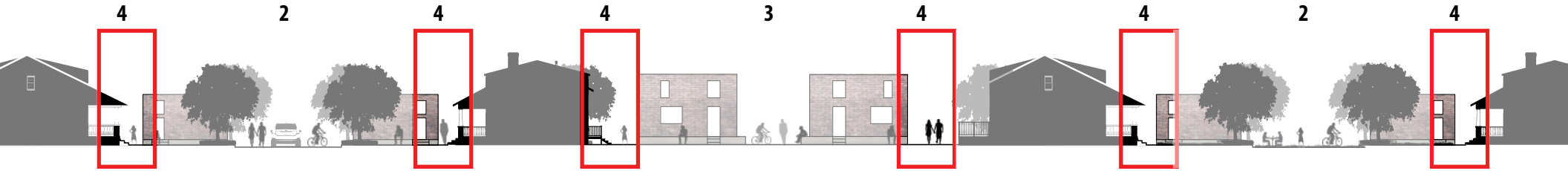
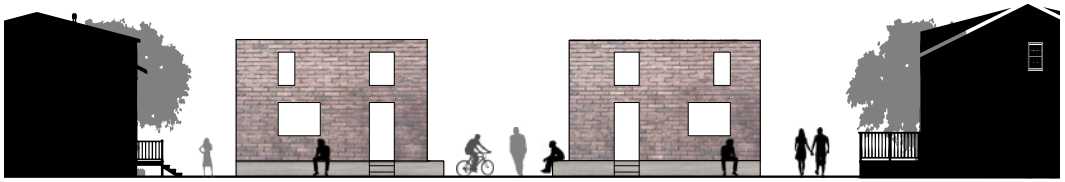


Figure 64 The new path

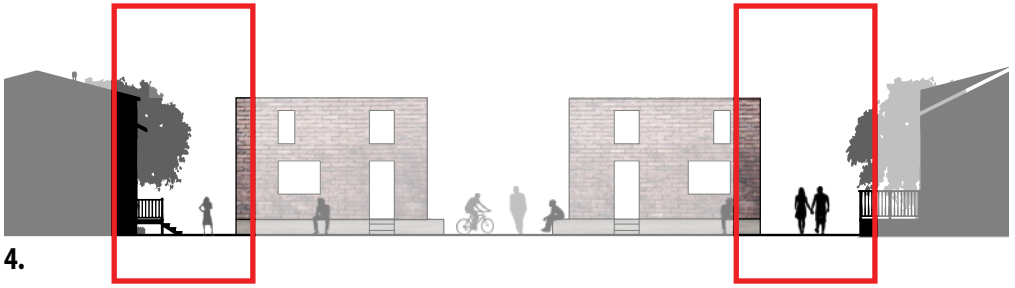
SCALES OF PATHS

1.

2.



3.



4.

Figure 65 New path scales

CONCLUSIONS - THE SCALE OF THE PATH

In response to the increase in pedestrian traffic and decreased vehicular traffic, some of the existing paths will be redefined by the people who live in the area. Different spaces call for different uses. There will not be one path typology for the area. Instead, a gradient of paths will exist from the center of the Roosevelt Neighborhood to the site area. The new scales of paths can be broken down into four paths that will allow a dense, walkable, urban community to be created in the single-family border areas of Roosevelt:

1. THE ROOSEVELT SCALE - This path remains unchanged to allow vehicular access through and around the Roosevelt Area.

2. RESIDENTIAL STREETS - The road becomes a place for cars, bikes and pedestrians. As open space is built out, it will impede the existing sidewalks, forcing all three forms on transportation to occupy the same space.

There are places where vehicular traffic will be removed completely. This occurs on residential streets that do not continue all the way through the site area. (See figure 66, Scale 2 diagram)

3. THE ALLEY - These alleys will be transformed from empty spaces used only for cars and garbage cans, to public, collective places. These alleys will be mixed use paths that are both static and dynamic. Allowing people the pass through or occupy the path.

4. DESIRE PATHS - Pedestrian only access happens through these paths. They exist in-between buildings and act as connections between other paths and places.

This combination of paths will be more than thoroughfares and walkways. They will become part of the public realm and

Figure 66 New path diagram

be utilized as public space in a similar way to Katwe. In this part of Roosevelt, walkability and mixed use activity can thrive. Streets and roads will become a place. Where cars use to drive, people will sit at outside a coffee, order food at a Chinese restaurant or play basketball. Life will occur in these spaces in-between.

THE RESULT | THE IN-BETWEEN SCALE

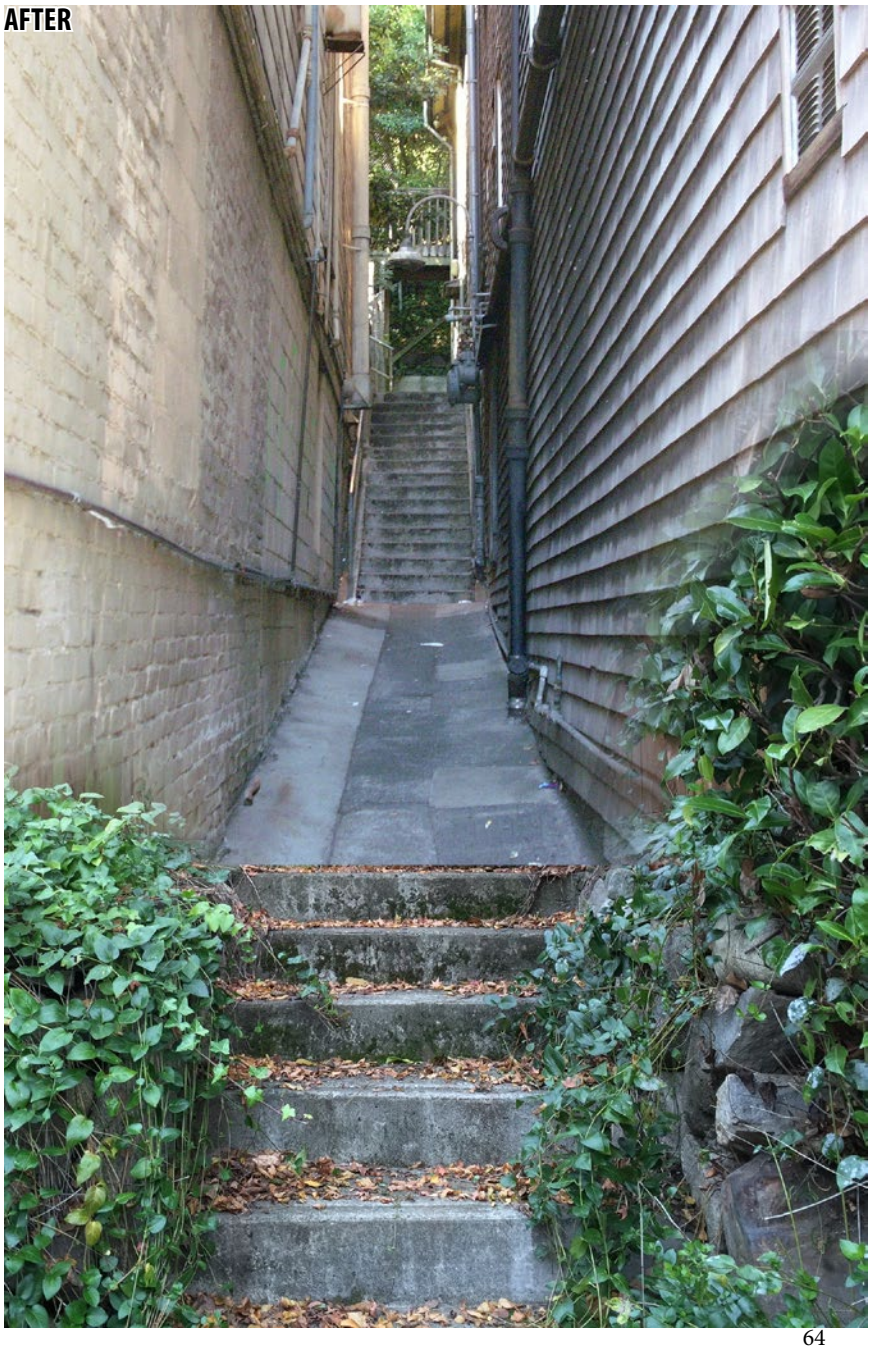
By occupying the land more efficiently, there will be less private open space, but more public space. Before, most open space would have been private. The new path scales and increased density will create new public space. The streets and alleys, like in Katwe, can become places that can handle a variety of mixed use activities. The figures to the left diagram the new paths and open spaces that will exist in the site area.

The following pages feature before and after images of the different paths in the site area.

DESIRE PATHS

Increased porosity and occupation of open land will create desire paths. Where once was a fence enclosing private space can become a path that connects people to places.

Figure 67 New desire paths



EXISTING ALLEYWAYS WITH NO POROSITY

Cars and garbage cans only occupy the neighborhood. There is no porosity that allows pedestrian traffic through private yards into streets beyond

Figure 68 Existing alley | No porosity

NEW ALLEYWAYS

Transformed alleys will allow for a variety of uses. Desire paths will connect people through from the alleys to the new residential streets and the Roosevelt scale roads

Figure 69 New alley & desire path

EXISTING, EMPTY ALLEYWAYS

Figure 70 Existing alley | Empty

NEW, VIBRANT ALLEYS THAT FACILITATE A VARIETY OF USES.

Figure 71 New, active alley | Empty

Figure 72 Existing alley | Empty II

NEW, VIBRANT ALLEYS THAT FACILITATE A VARIETY OF USES.

Figure 73 New, active alleyway II

RESIDENTIAL STREET

This residential street connects two other residential street but does not continue beyond site area. This kind of street does not work efficiently for cars except for parking.

Figure 74 Existing Residential street

NEW RESIDENTIAL STREET

Once car traffic has been removed, new density and buildings will be built between the space of the sidewalk and existing residences. This forces bike and foot traffic into the road. The road itself can be occupied as public open space.

Figure 75 New public space

CHAPTER FIVE: CONCLUSIONS

Figure 76 Chad Bailey | Conqueror of Katwe

CONCLUSIONS

Informal settlement like Katwe will continue to grow in cities around the world. These areas will need to become more connected to the formal city. They will need to be upgraded and improved to allow a high quality of life to their residents. But, just because places like Katwe have their challenges, does not mean there is nothing to learn from them. These places can provide ideas for improving cities in the future.

The application of lessons learned from Katwe in Seattle is an experiment to test whether it really can provide new ideas to better our cities. While the in-between scale of development is unlikely to happen with current zoning regulations and development patterns in Seattle, there are lessons that can be extracted and applied to the current development patterns in neighborhoods like Roosevelt. The notion for creating new walkable communities where low density and high density development meet highlights the missing scale of development between the two scales.

Low-density, single-family areas will be continue to be redeveloped into higher density, big block apartment buildings in Seattle. The need for dense neighborhoods will increase into the future. Areas like Roosevelt will grow quickly because people will want to be closer to light rail access. Facilitating walkability requires more putting retail on the ground level of apartment buildings. Areas need to be designed for the pedestrian to allow maximum pedestrian access and use.

Lessons learned from Katwe can be applied in many ways beyond what this thesis proposes. Keeping in mind ideas like porosity, desire paths and scaled development can influence how we build our redevelop our neighborhoods in the future. Street levels of big block buildings should become more porous. If walkability is desired, buildings should not block pedestrian traffic, but instead, encourage it. When neighborhoods are redeveloped from single-family use, it provides a perfect opportunity to create desire paths

that can promote walkability in our cities. These desire paths could cut through or between the ground level of buildings, creating new open spaces at the street level, but off the street.

Separating pedestrian traffic from vehicular traffic in specific areas can provide new places for people to use and occupy in the city. Open space does not always have to be a park or green space, it can be a path, a reoccupied street or any ally. It can be the space outside someone's front door. What is important for accomplishing walkable areas is for people to use and inhabit open space in a variety of ways.

Architects should be involved in studying and improving informal communities because one billion people are living in these areas! However, before they try to improve them, they need to know about them. Analyzing and trying to make logic of a place like Katwe reveals a lot about the way people function in informal settlements. The application of that knowledge can and should be used to improve communities everywhere. Creating dense, walkable communities is something that many American cities have failed at doing, why not look to slums as inspiration for how to do so.

LIST OF FIGURES

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