An architectural rendering of a modern building with a colorful mural on its facade. The mural features abstract shapes in orange, yellow, green, and blue. A group of people is walking on a paved path in the foreground, and a large green tree is visible on the right. The sky is blue with white clouds. The text is overlaid on a semi-transparent white box with a black border.

**UTILIZING LEARNINGS
OF INFORMAL
SETTLEMENTS IN
COMMUNITY PLANNING:**

**THE CASE OF KAWE
MEATPACKING DISTRICT,
DAR ES SALAAM
TANZANIA**

SUSTAINABLE URBAN DESIGN
MASTER THESIS
BY MARK STORIE

**Utilizing Learnings Of Informal Settlements In
Community Planning:** The case of Kawe Meatpacking
District, Dar Es Salaam Tanzania.

Master Thesis Booklet
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SUDes
Sustainable Urban Design

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Project Summary

Informal settlements, or unplanned sectors of the city, are vital for providing shelter for low and middle income households in the developing world. In the case of Dar Es Salaam, Tanzania, informal settlements have a long history dating back to the early colonial beginnings and today provide housing to over 70% of the city.

In these densely populated environments of the informal sector, residents freely create environments that contain desirable characteristics of neighborhood planning, including shared open space, local economy, and community participation. These environments have the potential to create environments that have a resilient local economy and deeper sense of place, however without access to municipal infrastructure and land tenure, these environments have little chance to reach their full potential.

A new approach is necessary to unite both the characteristics of the informal settlements and the sensibilities of the planned developments. My thesis utilizes a new approach, which unites aspects of both the formal and planned settlements to create a new neighborhood on the grounds of a former meatpacking factory and pasture in the Kawe neighborhood of Dar Es Salaam, Tanzania.

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An aerial photograph of a densely packed urban area, possibly a slum or a high-density residential zone, with a teal color overlay. The buildings are small and closely packed together, with some greenery visible in the center. The overall tone is dark and somber.

BACKGROUND & INTRODUCTION



Introduction

My interest in the topic of informal settlements in Sub Saharan Africa stemmed from two separate points. Firstly, informal settlements are vital to urban growth and are often home to large portions of urban inhabitants in the cities of the developing world. In the case of Dar Es Salaam, informal settlements are home to roughly 70 percent of the urban population. Such a large percentage of population living outside of the planned city provides evidence that traditional planned housing developments are not effective in meeting the needs of the growing population.

Secondly, informal settlements grow and develop into communities that contain elements of local economy, stewardship and communal ownership. Furthermore, this development occurs in absence of interference of the city planner or engineer, and construction costs, albeit simple and inexpensive, is usually funded directly by the homeowner.

It is my belief that solutions to this challenge may be found through the study of informal settlements. Understanding how settlements grow, are maintained, and governed may point toward a new direction in how urban planning may be carried out and ultimately create new communities that could potentially have a greater economic, social and ecological impact while at the same time contribute to the overall prosperity of the city.

Informal settlements are not hygienic environments and often lack basic infrastructure needed to sustain a minimum

living standard. In absence of planning interventions, inhabitants will continue to construct informal settlements that will hinder the health and welfare inhabitants, and compromise the ability of the city to upgrade these areas at a future date.

The Unique Character of the Informal Settlement

What is striking to me about these settlements is the unique morphology, the density and diversity of its inhabitants and variety of local economy and business practices. When looking at the street patterns within the informal settlements of the city, one may recognize a similar pattern language utilized in early European towns where building footprints were carefully located so as to not interfere with established footpaths and thoroughfare. In addition to this pedestrian centric structure, inhabitants in the informal settlements are able to self-govern themselves and locally elected officials intervene in local decision making and conflict resolution. When these characteristics are compared to traditional residential developments within Dar Es Salaam, one may draw a conclusion that there is much that can be learned from the informal settlements that may go far to enhance an array of desirable characteristics which tend to be lacking in contemporary planned neighborhoods of the city.

Although these above-mentioned qualities are desirable, there are many negative aspects of



Figure 1.1 Street pattern of Central Copenhagen. (Google Earth, 2021)



Figure 1.2 Street pattern of Manzese Settlement, Dar Es Salaam. (Google Earth, 2021)

the informal settlements. Most notably, health and safety, ecological sustainability, and the huge burden these settlements place on the municipality combine to undermine the positive qualities of these settlements. Land rights and bank lending also contribute to slowing the economic growth for the inhabitants and their community.

Uplifting the Potential of Informal

There is a potential for municipal planners in the developing world, especially in Sub-Saharan Africa, to play a proactive role in co-creating and guiding the growth of the informal settlements. If properly managed, such an approach could assist in offsetting future expenditure and efforts required to upgrade the public infrastructure of the unplanned sections of the city. In my research of informal settlements in Dar Es Salaam, I have uncovered qualities and characteristics that could be embraced when planning and designing new mixed use developments within the city. This new approach would not only create a vibrant street life but would also empower community leadership and local decision making which would also positively impact the city overall.

This thesis project explores the possibilities of utilizing the local characteristics of informal settlements , such as movement patterns, and the creation of market corridors, while also

envisioning greater potential with public and private investment in the form of public infrastructure and access to bank lending.

To paraphrase the words of Jan Gehl, we should, as planners and urban designers, aim to humanize the world, and uncover the uniqueness of different cultures, landscapes, and urban spaces, before attempting to intervene with our good intentions.

“Our mission is not to Copenhagenize the world...However, it is our intention and purpose to humanize the world and to make visible the life of communities and the needs of people.”

Jan Gehl Mission Statement



Figure 1.3 Morogoro Road leading to the central business district of Dar Es Salaam. (Source image : https://live.staticflickr.com/8108/8660538706_d7a259348c_o.jpg)

Background

Initially, my introduction to the Dar Es Salaam and the Kawe neighborhood stemmed from course work undertaken in the Urban Shelter Theory course at Lund University during the fall of 2020. This introductory course covered a broad range of topics centered on challenges faced by rapid urbanization in Africa and was initially designed for students to visit the city of Dar Es Salaam, Tanzania. However due to the Covid pandemic and international travel restrictions, the course adjusted to allow for a series of informative lectures from leading academics from the school of architecture at Ardhi University, as well as interviews with architects and engineers working at a local NGO, and project managers working for the National Housing Commission. The result of this introduction painted a clear picture of the past, present, and future challenges the city of Dar Es Salaam.

As part of the studio course, we had the opportunity to improvise a design response of a 50 acre greenfield site located some 20 minute drive from the central business district (CBD) of the city in the neighborhood of Kawe. Unlike the surrounding urban environment, the site has remained for the most part untouched by the ecological, social, and economic forces caused by rapid development during the last 40 plus years. By the end of the semester, we collected data ranging from question surveys, interviews, and with the assistance of a local architecture student of Ardi university, we were

able to conduct a photographic survey of the site.

Our group project proposed a neighborhood design of a 4 hectare portion of the site 50 hectare site. Due to my curiosity in exploring the topic of rapid urbanization and exploring new approaches to development, I saw the potential to further explore possibilities a design response that centered on utilizing characteristics found in the informal settlements of Dar Es Salaam, and in turn raise the potential of development in the face of rapid urbanization in the Sub-Saharan context.

What are 'informal settlements'?

Informal settlements are portions of the city inhabited by individuals or small groups that have acquired their right to occupy their land through informal, or local customs and may or may not be recognized by the municipality. In these environments, development is self regulated and occurs as a result of individuals fulfilling their basic need of shelter. Within this realm, the municipality has little to no control over the development, and inhabitants in many cases do not hold legal rights to the land. These settlements are also known as, common settlements, slums, favelas and shanty towns. A definition given by the United Nations defines it more carefully as a group of people who share a common space within an urban area and lack one or more of the following characteristics;

“Durable housing of permanent nature that

protects against extreme weather and climatic conditions; Sufficient living space which doesn't exceed three individuals living in the same room; Easy access to safe drinking water in sufficient quantities and affordable cost; Security of land tenure which guarantees rights of occupation and guards against forced eviction. Other names of informal settlements are as follows: slums, shanty towns, favelas, popular settlements” (U.N. Habitat).

In the developing world, informal settlements make up a large proportion of the urban environment. It is estimated that by 2050, 75% of the global population will reside in an urban environment, at which time, 60 - 70 % will be living in housing labeled as informal housing (citation needed). This transition of rapid urbanization is most severe in the developing world where the informal sector makes up the majority of the housing market, resulting in substandard living conditions and a continued degradation of the environment. This trajectory of development can be considered most catastrophic in areas of the developing world where municipalities have been grappling with a combination of national challenges both form political and environmental.

The Evolving City and the Power of Informal Settlements

The manner in which streets are laid out directly correspond to the quality and 'sense of place'. Over the course of the last century, street layout of emerging industrial cities emphasized

Commonality of Street Character and Activities

orthogonal grids to allow for efficient and safe movement of motorized vehicles. As a result, the public realm and arrangement of housing began to resemble a repetitive pattern which (was superimposed over a territory with little regard to local conditions) was a stark contrast to earlier city planning which characteristically had meandering street network which was constructed over time by the movement patterns of inhabitants. As a result, the modern city plan began to resemble a repetitive pattern which was superimposed over a territory with little regard to local conditions. The meandering street network of the preindustrial city became a relic of the past, which was incompatible with the new requirements for automotive traffic. Although the urban form of the old city may be a relic of the past, modern culture has much nostalgia for such places where the 'sense of place' is still preserved.

Examples of the old world city structure are extensive, and can clearly be seen in the central parts of Copenhagen, where windy streets seems to be informed to unseen forces. Unplanned neighborhoods of Dar Es Salaam also share elements of this structure. This may appear to the outsider as a series of dwellings which are poorly and haphazardly organized. However this is far from the case. For the inhabitants of these unplanned or informal settlements, the organization of the environment may only be understood through direct experiential contact at eye level and do not fit easily onto a simplified two dimensional map.



Figure 1.4 Street scene in Ystad, Sweden. (Source: Mark Storie, 2019)



Figure 1.5 Street scene in Zanzibar, Tanzania. (Source: www.place-sandplants.com)

The similarities between the street pattern of informal settlement and preindustrial cities of northern Europe share not only morphology. In addition, similarities between these two may also extend to characteristics of public space which include prioritization of pedestrian movement, tendency for users to linger in view of others, and location of storefronts along walking corridors.

Many may equate the meaning of slum or informal settlement, as places which exist mostly in poor parts of large cities in the developing world where the environment is unhealthy and lacks basic infrastructure. Although this may be true, informal settlements are much more than what they lack. Unlike the planned city, informal settlements are environments that are constantly evolving by the hands of its inhabitants which makes informal settlements a powerful creative force, that if properly understood and utilized, could

lead toward healthier and more prosperous urban development.

City planning and urban design have gradually begun to embrace the social, and environmental forces that influence quality of life in the urban environment. Within this new approach toward city planning, we can see an emphasis on environmental sustainability, and a recognition of the importance of community engagement and inclusion of stakeholders in the design process. However within Sub Saharan Africa, this new approach has yet to be fully realized,

however there examples of large scale developments such as Green City Kigali, in Rwanda, which utilize community engagement within the design process as well as social programs that to aim to create meaningful change in the community.

Role of Informal Settlements in the Developing World

Informal settlements provide housing options to those of lower income households as well as filling the gap of new housing provisions that the formal market can't. Emerging megacities of the developing world are growing at a pace which can not be supplied from the formal housing sector resulting in the proliferation of unplanned or informal settlements.

Among the many political, and economic challenges faced by planned urbanization in the developing world is the lack of capacity of local municipal governments to strategically guide the growth of the city. These shortcoming often stem from an overburdened bureaucratic system that is stifed with understaffed, underfunded and in some cases under qualified personnel who are incapable of responding to the volume of work.

The informal settlement has emerged in part as a result of the insufficiencies of the municipality, and provided new urban settlers with a route to obtaining shelter to meet their most basic needs in a timely and efficient manner.

But the role of these informal settlements are

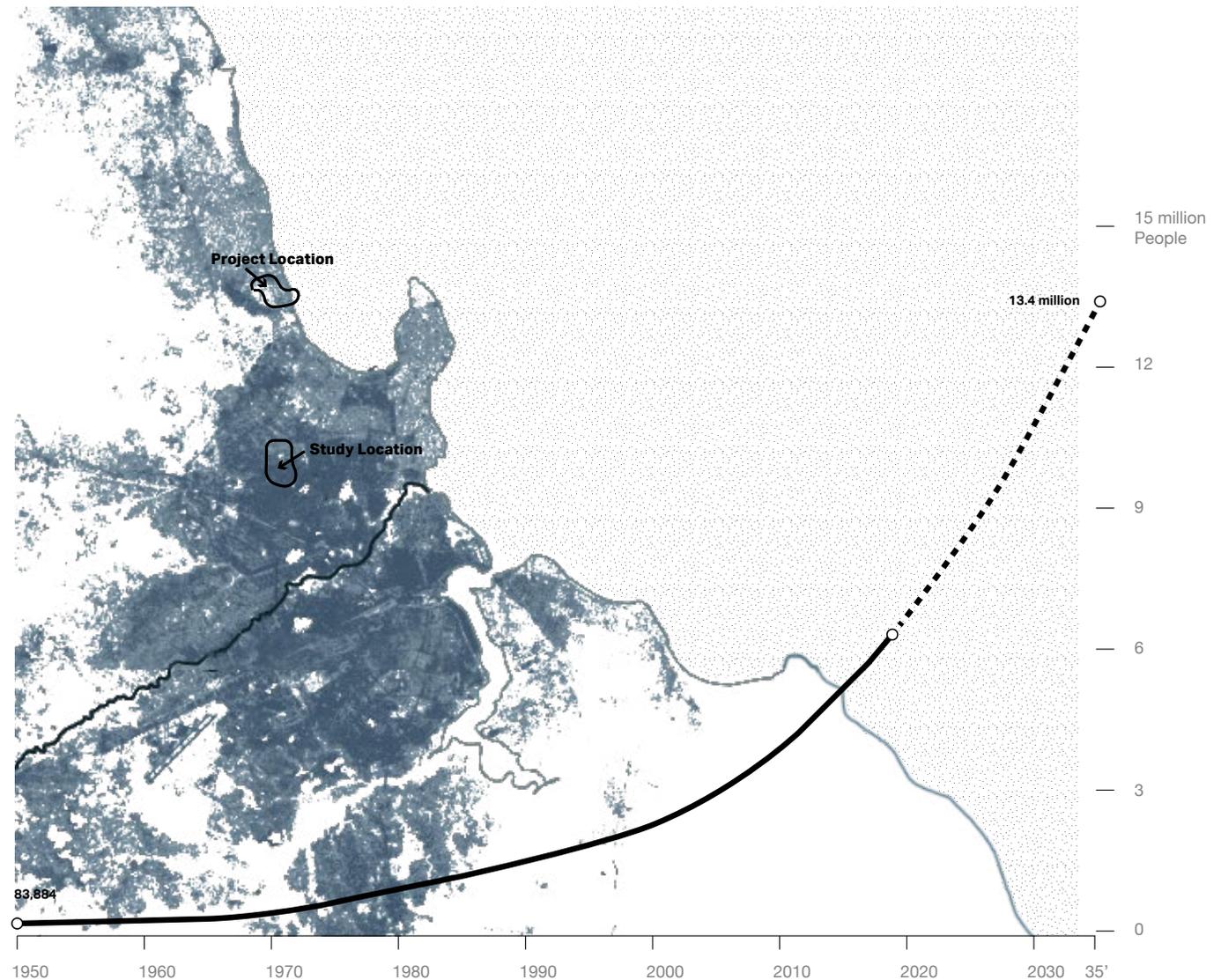


Figure 1.6 Dar Es Salaam is one of the fastest growing cities globally with a growth rate of 5.4% and will reach a populaiton of 10 million within the next 10 years. (Source: United Nations World Urbanization Prospects, 2018)

much more than simply a temporary solution to the insufficiencies to a broken and flawed bureaucratic structure, rather these environments are the true expression of a city in transition. The structure and diversity of its parts represent the environment that responds to the needs of the inhabitants, which make these parts of the city truly unique and distinguishes itself from the planned and ordered parts of the 'other' city.

These self organized environments develop over time as a continual process that utilizes the efforts of multiple generations to construct their environment through a process of collaboration and community engagement.

Rapid Urbanization and Informal Settlements in Sub-Saharan Africa

In the case of Africa, Urbanization is occurring at an unprecedented rate which will see the addition of 10 new mega cities, or cities with the population greater than 5 million inhabitants within the next 10 years, bringing the total number of 18 megacities to the continent.

What can be learned from informal settlements?

Unplanned settlements, although lacking in qualities that mitigate risk of degradation to health and ecology, have shown to provide environments which promote diversity, strengthened community spirit, stewardship, as well as providing a density greater than that

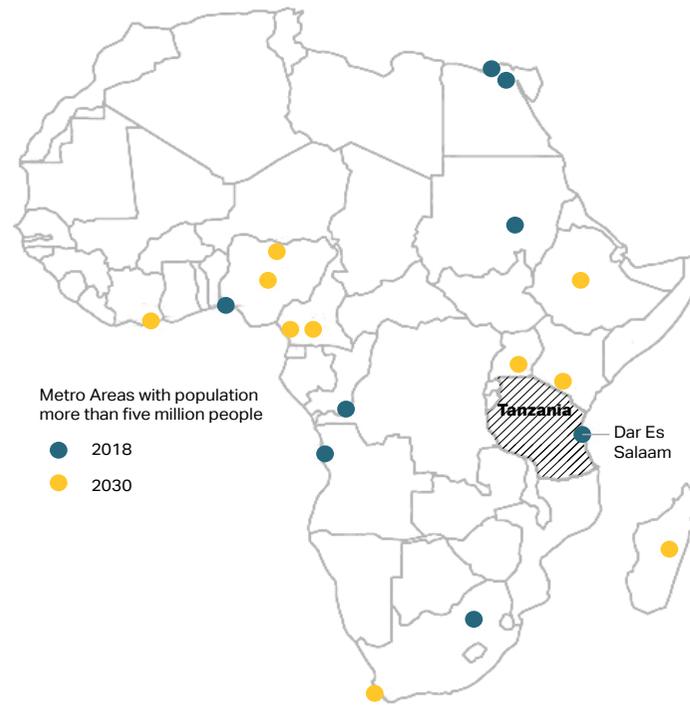


Figure 1.7 Megacities on Africa. Data Source: (Source: United Nations World Urbanization Prospects, 2018)

of traditional planned neighborhoods. It is expected that informal settlements will continue an exponential growth worldwide over the next 30 years and likely beyond as these environments play a fundamental role in the provision of housing in today's rapidly growing cities throughout the developing world. If we are to make better decisions on how to develop

more resilient cities that respond to the economic, social and environmental challenges, we should not only understand the shortcoming of the approaches of the last century, but we should also understand the potential benefits of a decentralized approach to urban development.

Method of Study and Application

I approach my research through three methods. First method will be through the review of relevant literature relating to the topic of urban development in the context of the developing world as well as academic research papers and journal articles that give insight into life within the informal settlement.

To better understand the urban morphology and social framework of the informal settlement, I have conducted a qualitative analysis of Manzese, one of the oldest and largest informal settlements. Through this research, we may begin to understand

the inner workings of the informal settlements, and understand the inherent challenges and strengths. These findings will be applied to create a design methodology that will be implemented into a design response for Kawe neighborhood located in Northeastern Dar Es Salaam.



INVESTIGATION:
INFORMAL SETTLEMENTS
IN DAR ES SALAAM



Formal Vs. Informal Housing

Currently one billion inhabitants are living in Informal settlements worldwide, or nearly 1/3 of the world's urban populations. These environments, like the city, are continually evolving and formed by its inhabitants to suit their needs and are often the only option for low income migrants who seek economic prosperity in the growing cities.

Informal settlements are often built in the leftover or undesirable sectors of the city. Often these areas are prone to flooding, and lack basic infrastructure including roads, access to clean water and sewer. Residents of these settlements do not have formal or legal rights to occupy the land, thus creating the need for new construction to be funded directly by the residents where bank lending is not possible nor feasible.

Planned settlements, on the other hand are constructed in accordance with planning regulations and often marketed to the economic middle and upper class. Similar to other large growing cities in Sub Saharan Africa, new planned residential developments can't keep up with the current housing demand leaving inhabitants to search for housing in the informal sector where housing is more readily available and affordable.

Although there are many shortfalls within the informal settlement, including the lack of basic infrastructure, it would appear that these environments, provide more than basic shelter. These environments, created in absence of



*Affordable housing
starting at \$20,000*

GPD = \$2,851

interference from the city planner have managed to create resilient communities which have a greater sense of place and community participation than many of the planned communities within the city.

Affordable Housing in Dar Es Salaam

The pathway to home ownership in Tanzania is challenging for most families. Developments that market themselves as Affordable housing is often not affordable for most low income residents. For many low income families, bank lending is often a major barrier that prevents the possibility of home ownership. Low and middle income families who manage to legally own their household will buy with years of savings to purchase their house, and in some cases will even move into an unfinished house in order to allocate future saving toward ongoing construction projects.

An example of how challenging homeownership has become in Tanzania, the typical apartment units that are marketed as "Affordable Housing", such as the units shown in the photograph (left) sell for a price of \$20,000 for 37 sqm of space, which is a tight fit for a typical Tanzanian family. In comparison, a typical 90sqm house sells for \$43,000, a price that is quite unattainable for most households when the current GDP in Tanzania is \$2,851 (IMF, 2020).

Figure 1.9 The Gezaulole Residence located near the CBD of Dar Es Salaam is one of many examples of how new affordable housing is missing its mark. Photo credit: Nichole Sobecki (Rosen, 2019)

Formal Settlements

Formal settlements in Dar Es Salaam are planned by city planners, engineers, and architects. For economical factors, these environments are usually constructed by one general contractor, and utilize a limited palette of materials and housing plans.

Although there is much demand for housing, many of these new residential developments are far too costly for the vast majority of prospective home buyers.

These environments, which appear to be monotonous and repetitive in form, rely on large investments in public infrastructure, and private investments from banks to fund the construction activities. This traditional approach to housing development appears to not be sufficient to solve the cities housing shortage.



Figure 1.11 typical planned settlement in Dar Es Salaam. Photo Credit: Nichole Sobecki (Rosen, 2019)



Figure 1.10 Typical housing pattern of a planned settlement in Dar Es Salaam. Scale of area: 1sq. km. (Data Source: cad-mapper.com)

Informal Settlements

Informal Settlements in Dar Es Salaam have a long standing history. Since the colonial era, Informal Settlements have housed many of the working class of the society. In modern times, these settlements have become the home to the lower and middle class due to the shortage of affordable housing options in the city.

Unlike the formal settlement or planned developments, informal settlements are developed by many individuals who each have separate needs and agendas, but come together as a whole to create cohesive realities where the everyday life is enriched through social contact and exchange. This environment is actively adapted to meet the demands of its inhabitants.



Figure 1.12 typical unplanned settlement in dar es salaam. Source: <http://cop21.unicef.fr/country/tanzania/>



Figure 1.13 Typical housing pattern of an unplanned settlement in Dar Es Salaam. Approximately 1 sq.km. (Data Source: cad-mapper.com)

Case Study of Informal Settlement

To better understand the inner workings and of informal settlements, I studied the development process of the informal settlement and how the emergence of the local economic economy grew in relation to access to resources. In this research I also uncovered many of the challenges that stem from policy to environmental challenges due to overcrowding. I choose to focus on understanding movement patterns in relation to development and its relationship to local economic development.

In addition to these observations, I will look at specific environmental challenges that many informal settlements face with regards to environment and sanitation.

Statistics of Manzese Settlement

Since becoming incorporated into the city in 1973, Manzese has gradually matured into one of the densest informal settlements in Dar Es Salaam (Sliuzas).

Occupying 186 hectares, Manzese has an approximate population of 70,507 inhabitants who occupy the neighborhood's 9,504 buildings (Census 2012).



Figure 1.14 Map of the case study area which is the neighbourhood of Manzese located some 20 minutes West of the CBD in Dar Es Salaam.

Influences of Housing Pattern

In the case of Manzese, the formation of the housing pattern was in direct relationship to the physical, cultural, and economic inputs (Sulizas, 1988). Although these three factors are continually evolving, the 'physical' factors, such as land quality, pathways, and utility access, are constant guiding structure from which the economic and cultural components of the settlement emerge.

Land Quality

Quality of land was an important factor in the sequence of development in Manzese. Early settlers of the site preferred to construct their traditional dwelling units on flat dry ground, which was favored over wet, marshy grounds and areas prone to seasonal flooding. Generally, once the favorable land had been occupied, the areas of inferior quality were then occupied.

Due to overcrowding, in 2015 Manzese has reached a point of development where nearly 3% of built structures occupy areas that are categorized as flood risk. On the nearly 2,000 structures that fall into this category, twelve are either schools or hospitals (Ramani Huria, 2015).

Accessibility

Foot traffic is the main mode of transportation in the informal settlement. Overtime, a well defined network of pathways emerges from the ground plane, tracing the popular routes which connect houses to places of work,

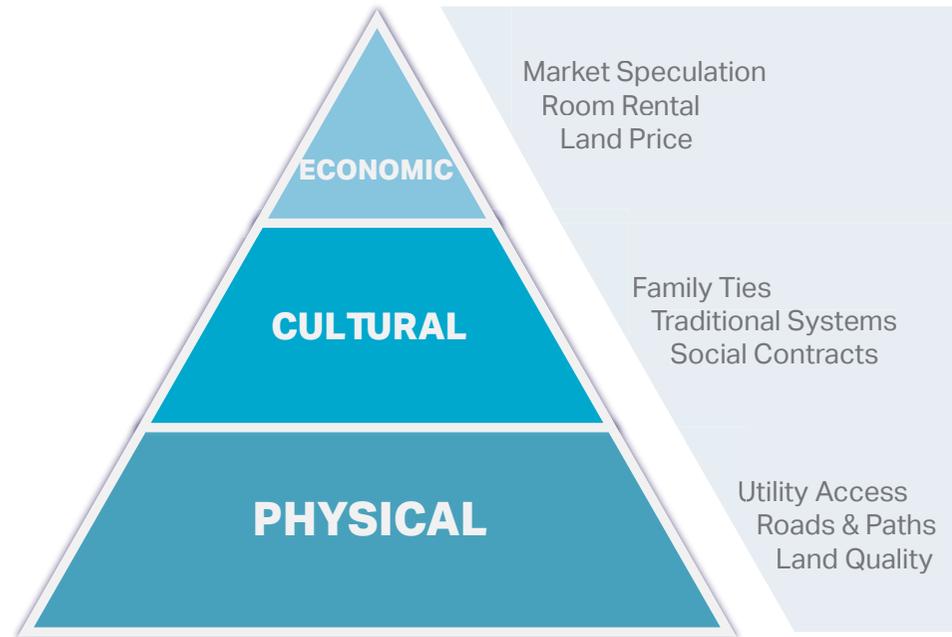


Figure 1.15 The growth of informal settlements is likely caused by a combination of physical, cultural and economic inputs, which changes and grows over time.

schools, religious centers and market places. These paths tend to favor areas that remain un-flooded throughout the monsoon season, ensuring uninterrupted access for local residents. Utility Access.

During initial stages of development, the majority, if not all construction activity is carried out without supervision or input from city planning. As a result, no public services are provided or made available to residents. At these early stages, when the density is

relatively low ground water may be drawn from constructed wells and will often be the main source of water.

Many settlements utilize pit latrines to dispose of fecal waste. In crowded settlements, serious health risks emerge due to the overuse of this system often resulting in the contamination of groundwater. As a result, many upgrading projects target piped water supply and sanitation as priority to mitigate potential health risks.

Growth Process

Although few detailed records exist showing precisely how Manzese grew from its initial beginnings in the mid twentieth century, we can hypothesize that this settlement shares developmental characteristics of similar informal settlements. Such developments primarily occupied land deemed as 'good' quality which characteristically was in close proximity to resources and transportation nodes. As the area gradually densified during the period of time between 1975 – 1980, new building gradually occupied areas that posed a flood risk (Sulizas, 1988).

These early patterns of development were organized alongside established pathways of the area with few exceptions. This approach to development which respected the pre-existing movement patterns contributes to a walkable character which can still be observed to date.

As the neighborhood matures, undeveloped land becomes scarce. Residents often expand their dwellings, or couple housing units together. Areas previously deemed as less desirable for development, either being at greater distances to transportation nodes or in areas prone to flooding, are gradually occupied.

The informal Development Process



1. Initial Development

Local destinations, such as access to transportation, clean water, and resources create a network of patterns of movement. Within this framework, the structure of the future community emerges informed by the many footsteps of the local residents which create trodden pathways over time.

2. Formation of informal street housing

(small units of 30-90sqm~)are built in conjunction with the established structure. Local economy grows as streets mature with established markets and cafés

3. Densification & infill

unoccupied land becomes scarce as settlement density increases. Existing houses become coupled, and new structures begin to occupy areas previously considered undesirable for development.

Figure 1.16 Illustration of the growth process of the Manzese Informal Settlement.

The Informal Block

Early development of Manzese primarily occupied land deemed as 'good' quality and was likely outside of the flood areas within the neighborhood. As the area gradually intensified during the period of time between 1975 – 1980, new building gradually occupied areas that posed a flood risk (Sulizas, 1988).

These early patterns of development were organized alongside established pathways of the area with few exceptions. This approach to development which respected the pre-existing movement patterns contributes to a walkable character which can still be observed to date.

As the neighborhood matures, undeveloped land becomes scarce. Residents often expand their dwellings, or couple housing units together. Areas previously deemed as less desirable for development, either being at greater distances to transportation nodes or in areas prone to flooding, are gradually occupied.

Traditional city blocks, which in many western cities have a clearly defined character and dimensions bear no resemblance to the informal block, which is largely determined by the boundary roads and pathways from which the settlement is structured around. The lifestyle within these blocks is both complex and challenging. Elements of the social life, local economy and environmental challenges is discussed in further detail within this chapter.



Figure 1.17 Map of the case study area which is the neighbourhood of Manzese located some 20 minutes West of the CBD in Dar Es Salaam.

Social Open Spaces

According to a survey which monitored the growth of several informal settlements in Tanzania, which including Manzese spanning nearly two decades, settlement housing patterns were typically one of two types: either a clustering or linear formation (Sulizas, 1988). Both types may be observed in Manzese, where the linear type tending to be located in closer proximity to the major road network, which take a character of 'market street' while the second, being of a cluster of small residential dwellings occurring within the greater settlement. As for the latter, the clustering of housing units create a visually connected spaces, similar to a courtyard. These spaces Sulizas termed as "Socially Open Spaces" where dwelling entrances faced a common open space, which often was connected to a network of open spaces, which in turn created a network of permeability throughout the settlement.

The following diagram, based on the research from Sulizas, illustrates the liminality* of the perceived socially constructed boundaries and their orientation to local pathways and building entrances. However these perceived limits of space is not only constructed by the orientation of buildings and their entrances, rather is further strengthened by the social bonds between neighbors and their appropriation of public space either through activity, such as

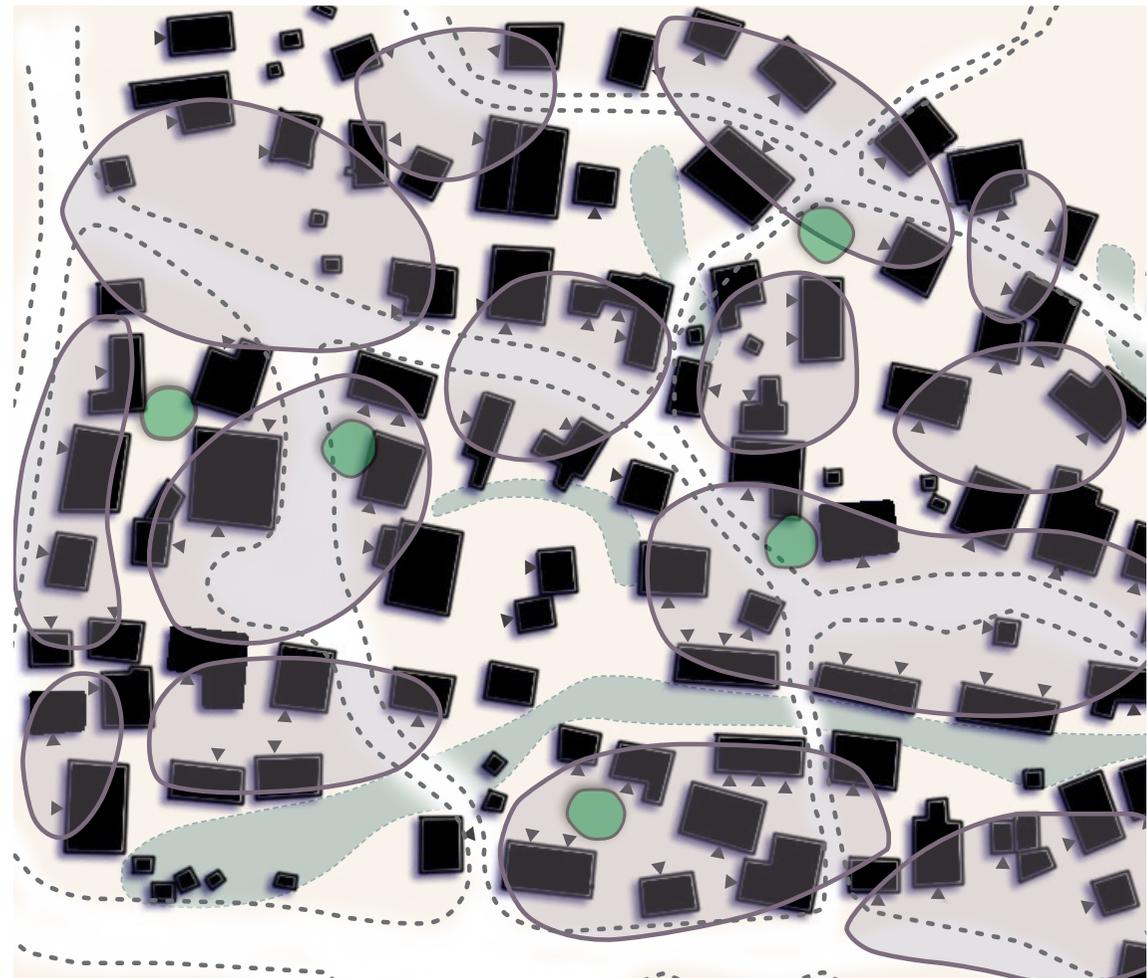


Figure 1.18 Diagram illustrating Social Open Spaces in relation to dwelling entrances and pit latrine infiltration areas. (Source Sulizas, 1988)

Legend

- Latrine Area
- Socially Open Space
- - - Pathway Boundary

0 5 10m

**Liminality, the concept of perceived boundaries of space is a term coined by Arnold Van Genarp (Rasmussen, 2012)*

basic maintenance and housekeeping, or by physical improvements and modifications such as gardening or tree planting.

When passing through these implied boundaries, social behavior gradually changes, forcing the visitor to surrender to the rules of the environment (Ramussen, 2012). Sulizas acknowledges the existence of 'social contracts' between inhabitants living in these clusters, despite their diversity and backgrounds as many migrants come from separate tribes within Tanzania. It is not entirely clear the breadth of the social contract, however we can assume that social good will and trust exists between neighbors which may nudge inhabitants toward stewardship and social sustainability.



Images 1 and 2: Footpaths within the Manzese (source for both images: <https://www.flickr.com/photos/danielsteen63/39162519214/>)

Retail and Market Corridor

Through the utilization of on-line resources including Youtube videos, and other social media sources where I was able to get a glimpse of the character of these market places within Manzese.

Retail corridors are found along the main roadways and footpaths of the neighborhood indicate the presence of an active informal economy within the settlement. There is also evidence to suggest a wide variety of retail types. Small hotels, restaurants, salon, and pubs and well as a variety workshop are present indicating that Manzese not only a place of residence for many but also functions as a place of work.

One key finding uncovered in my research, was that small shops of similar market type tended to group together, creating market segregated corridors for clothing, food or household goods. The roadside markets tended to be for household goods and electronic, whereas internal market corridors tended to be primarily clothing, or grocery types. It could be possible that markets on the internal streets prospered through greater shading from overhead canopies and restriction of vehicular traffic within the narrow alleyways.

Vendors selling fruits and vegetables made full use of the environment and even adapt their surrounds through constructing makeshift shade canopies to block out the harsh sunlight. Accessing the narrow corridors in pushes the vendors and pedestrian together in an exchange that would appear to be quite personal. I would imagine these vendors to be exchanging glances or words with those who pass by the market stalls.



Figure 1.19 Satelight image of market corridor within Manzese. Location of image shown on map (right)
Source: GoogleEarth (2021)



Figure 1.20 Image of market activity with improvised overhead shade canopy in the Manzese settlement.
Source: <https://gypsynester.com/photos/danielsteen63/38805305265/>

Distribution of Shops

LEGEND

- Building
- Highway
- Local Road
- Path
- Flood Plain
- Clothing
- Electronic
- Salon
- Travel
- Shoes
- Luggage
- Spa
- Workshop
- Auto
- Furniture
- Printing
- Butcher
- Bar
- Eatery
- Cafe
- Hotel
- Transport
- Park
- Gas

Location of satellite image
 Roadside Shops
 Clothing Markets
 Grocery Markets

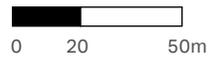
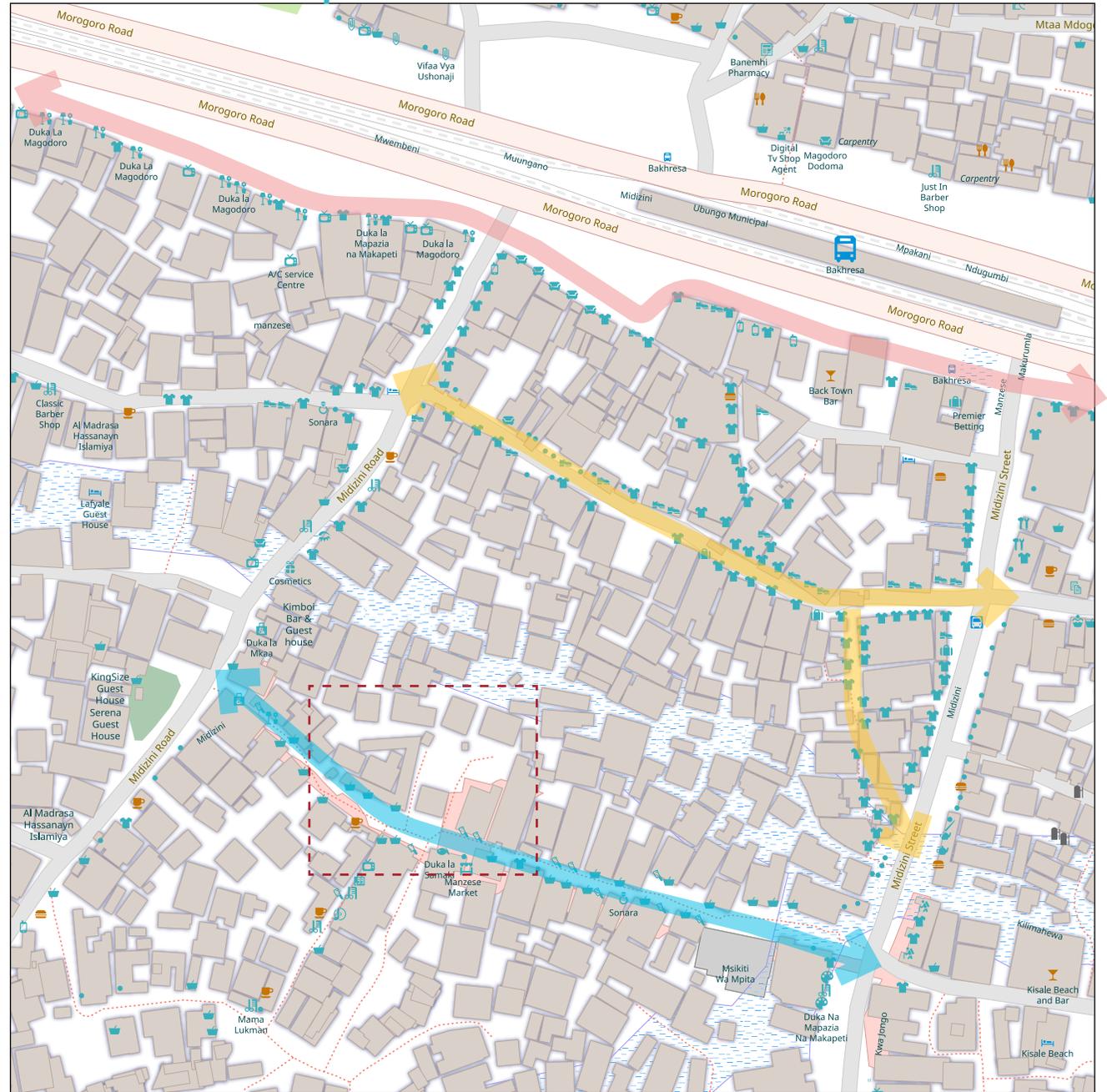


Figure 1.21 Map of market distribution within Manzese. Data Source: Openstreetmap.org

Threats and Challenges

Human Waste

One of the greatest threats to the health of the inhabitants of Manzese is household and fecal waste. Much of the settlement remains absent of basic infrastructure. Water and sewage infrastructure is not accessible within the settlement as the majority of the dwelling units utilize pit latrines that require regular maintenance to prevent fecal sludge from accumulating. In absence of the required maintenance could lead to contamination of the ground water. It was found that 1/3 of the inhabitants of Manzese perform the maintenance of these latrines themselves, a practice that is deemed unhygienic and high risk for severe illness (Saleman, 2020).

Maintenance of pit latrines is commonly performed through the use of vacuum tankers, essential a large truck with a vacuum, that collects the hazardous waste and removes to a designated waste area. However, due to the characteristically narrow access within the site, these vacuum tankers can't easily gain access.

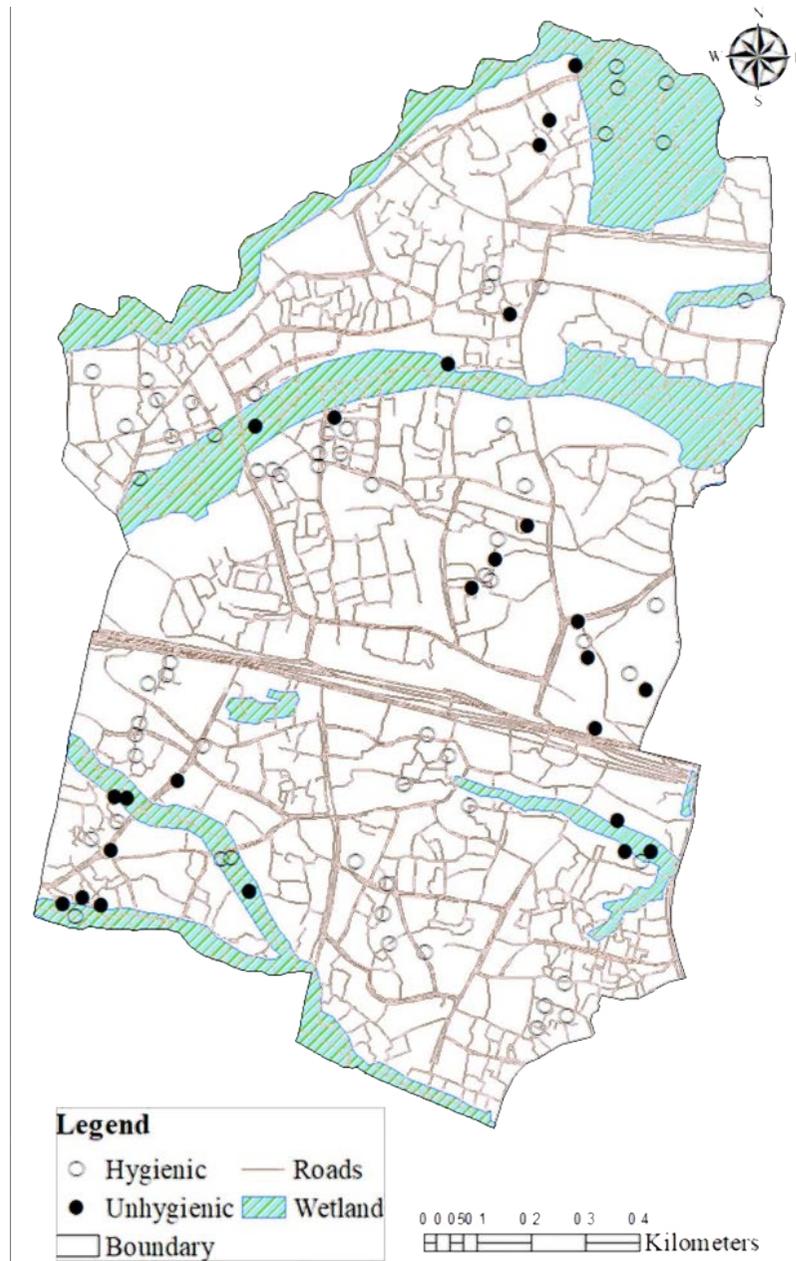


Figure 1.22 Inventory of wastewater threats in Manzese (Saleman, A., 2020)

Inundation Threat

Two creeks run through Manzese, one bordering norther half of the site and the other dissecting the southern half of the site. During the early development of the neighborhood, developable land sought to avoid these flood plains, however by 1980 development began to encroach on these flood prone areas as the neighborhood densified and land became scarce (Sulizas, 1988).

Some forty years after this initial encroachment, much of this land previously deemed unsuitable for development has now become occupied with dwellings, as a result 1,948 structures on the site area at risk of inundation during the city's rain season. What is concerning is that 12 of these flood prone structures are comprised of important public facilities including schools and hospital (Lossai, 2020).

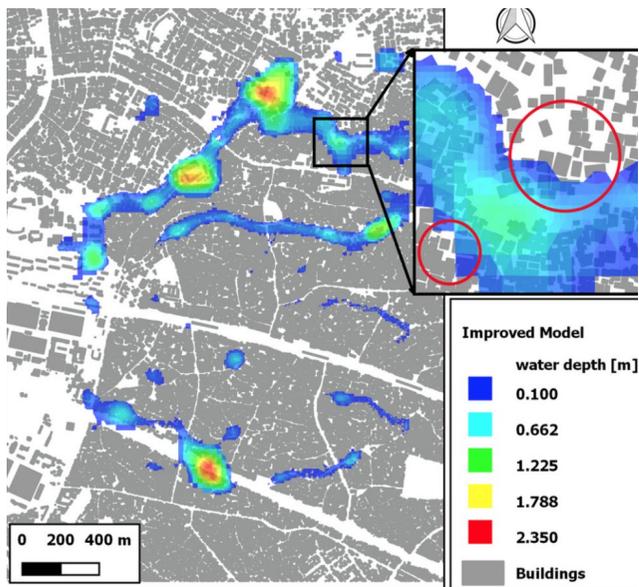


Figure 1.23 Flood risk areas within Manzese. Flood map from article: Crowd-sourcing and interactive modelling for urban flood management (Gebremdhin, 2018)

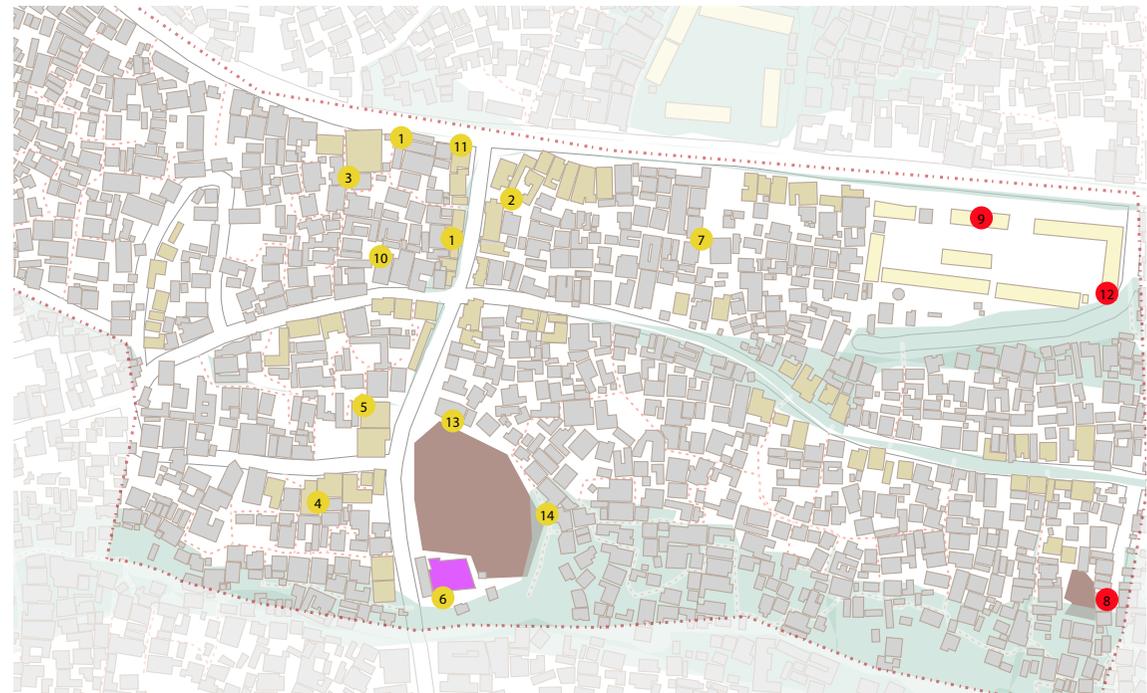


Figure 1.24 Inundation Threat Map of a northern subward of Manzese. Source (Rumani Huria, 2018).

0 20 50m

Ward: Manzese

Subward: Uzuri

Id	Name
1	B1 Lodge
2	Collins Pharmacy
3	El Amin Masjid
4	Garden Bar&Guest House
5	Keni Warehouse
6	Masjid Rahim
7	Masjid Umra
8	Muhadhara Al Madrassat
9	Muhalitani Primary School
10	Rombo Bar
11	Sweet Corner Bar
12	Tandale Magharibi Primary School
13	Tanzania Assemblies Of God Church
14	Uzuri Makaburini

Waterways

- River
- Stream

Landuse

- Cemetery
- School
- Flood Prone Area

Buildings

- Residential
- Religious
- Education
- Commercial

Assets and Threats

- Important asset and at risk
- Important asset and not at risk

Threats and Challenges (continued)

Upgrading Informal Settlement

In 1975, efforts from National Sites and Services organization to upgrade Manzese were made. These efforts targeted goals that would improve the quality of life of the settlement through upgrading the public infrastructure and grant land titling to the inhabitants (Sliuzas). Among these goals, the program sought to:

- Formalize land tenure;
- Provision of basic infrastructure (including upgrade of roads, water supply, public lighting, and drainage);
- Provision of public facilities including schools, clinics, and market space;
- Setting the groundwork of service plots for future growth;
- Establish of loan program for housing upgrades and new construction.

By 1980 little progress had been achieved toward achieving these goals (Sliuzas). As recognized in the study by Saleman in 2020, Manzese continues to suffer from the lack of the most basic infrastructure and continue to pose a serious health risk to the inhabitants of Manzese.

This broad development program set forth by the National Sites and Services nearly a half century ago is in line with similar recommendations from contemporary experts on upgrading informal settlements through an extensive development program linking social,

economic and legal needs for greater outcomes to be fully realized (Lasserve 2007).

At present, the city appears to suffer from a weak government organization. Although past efforts to improve Manzese appear that the government has sufficient insight into the needs of the settlement, the lack of follow through may suggest that improvement of informal settlements is not at the forefront of the city's agenda despite the fact that approximately 70% of the population live in areas classified as such. From a western perspective, I find it difficult to understand why the priorities of the government do not seek to at a minimum protect the health and welfare of its citizens, or even fail to collect on potential tax revenue from the untitled land.

However, it is clear that informal settlements will continue to fill the massive gap in the housing market making, unfortunately it will do so at a significant cost of the health of the citizens of Dar Es Salaam at the same time contributing to a long-term degradation of the environment.

Land Speculation and Gentrification

Formal land leasing or ownership is rare within the settlement, the majority of residents who live within the settlement have only informal rights that are recognized by community leaders of the settlement. Due to the shortage of housing, undeveloped land or vacant housing is rare in Manzese resulting in rising

rental and ownership of houses within the settlement.

Some investors purchase the informal rights to a piece of land and or house without the intention of occupying the property. In some cases, owners will allow the house to remain vacant for many years, only to sell at a later date to collect a greater return on investment. If this pattern of investment is carried out over an entire settlement, the effects could devastate the housing market creating a housing bubble while vacant housing remains unoccupied.

Many of the challenges that Manzese face could have been avoided if proper infrastructure, including sanitation and stormwater drainage was installed in the initial stages of development.

Despite the efforts of the municipal government to upgrade the settlement, residents of Manzese continue to face a variety of challenges ranging from environmental, health and economic.

Research Findings

Despite the numerous challenges that exist in the informal settlements, there would appear to be threads of good qualities that deserve deeper investigation. Among the positive qualities are cultural and physical characteristics that promote pedestrian movement, social contact and local stewardship. Furthermore, when comparing the formal versus the informal settlement, the informal structure appears, to contain a superior variety and number of commercial shops, as well as a denser population. This may indicate that the informal structure of calculated (meandering) pathways, delivers a superior layout than the traditional planned grid block structure, which is typical of western Euclidean city planning.

Two important aspects that may be key to the success of the informal settlement is 1) the arrangement of housing clustering in relation to pathways which promotes social connection as well as stewardship, and 2) the market street which functions both as a driver of local economy and an important connector to transportation nodes.

Housing Clusters and Social Open Space

The concept of 'Social Open Spaces' which occurs in the areas where a group of dwellings are arranged around a common outdoor space as observed by Sulizas. These social spaces

are linked to adjacent social open spaces by a local pathway which promotes walk-ability and social encounters. Building on the idea of the 'Social Open Spaces', these territories hold perceptual boundaries where visitors surrender to the rules of the environment (Rasmussen, 2017) which promotes a creative will from residents to engage with the common open space.

Market Street

Market streets play a vital economic and social role in informal settlements. These environments enrich the everyday life giving the informal settlement a unique character which encourages social engagement and civic participation, elements that tend to be missing in many planned settlements in Dar Es Salaam.

Unlike planned settlements, where engineers prioritize vehicular movement the roads and paths of the informal settlements are gradually carved by the many footsteps of individual traveling to their daily destinations. These pathways prefer the shortest and safest destination for the pedestrian and are influenced by slope, flooding, and proximity to important destinations.

It would appear that the market stalls, when positioned adjacent to these movement corridors, prosper due to the steady footfall of daily commuters and local residents. In

addition, the removal of vehicular traffic enhances pedestrian safety, and may contribute increased time spent in these environments.

The background of the slide features a photograph of a person in a wheelchair, overlaid with a semi-transparent teal color. The person is wearing a dark jacket and is positioned in the lower right quadrant of the frame. In the background, another person in a white garment is partially visible. The overall scene appears to be an outdoor or semi-outdoor setting with a building facade.

TOOLBOX FOR SUSTAINABLE DEVELOPMENT



Ingredients for Building Sustainable Communities

There are many positive characteristics present in the informal settlement that may be applied to create a framework or recipe for sustainable development in the local context. These positive attributes carry with it strong social cohesion, economic reliance, and active lifestyle, all of which are attributes that are often lacking in traditional planned settlements, especially in the context of Dar Es Salaam. I will discuss notable aspects that I have uncovered during my research of Manzese. These following characteristics may be applied to new developments similar to a toolbox that aim to achieve more social, economic and environmentally sustainable communities.

The Informal Block

The city block in the informal settlement does not occur in a regular orthogonal order, rather arrangement of city blocks respond to the existing pathways on the site which tend to meander in accordance with the terrain local conditions. These pathways, which are often created by the regular footfall outlining the preferred movement patterns by site users, should be preserved and the siting of buildings should not obstruct the established pathways on site. The outdoor spaces are primarily accessible to the public, and ownership may only be implied by use. Permeability within the block is desirable and fencing or blocking of access should be avoided.

Growth Process

Development occurs on small scale and local builders are often employed to construct the dwellings and structures. The building process, that is to say of individual dwellings may be phased over several years to meet the funding capacity of the owner. With the assistance of bank lending, which occurs in tandem with land titling, new development may take on a more ambitious approach. However new development should not be developed on a large scale multiple plots, which will inhibit land speculation and gentrification.

Retail and Market Corridor

Retail and store frontage are most successful when organized along narrow passageways that prioritize pedestrian movement and limit vehicular traffic. The market street often terminates at key nodes. These nodes are often transit nodes which connect to the greater city and are important daily commuting. Thermal comfort in the market corridors is vital in the hot and humid climate of Dar es Salaam. In this environment overhead shading, either by shade canopy, or passive shading is necessary to ensure that the spaces may provide comfortable environments where people will enjoy for extended periods of time throughout the day.

Social Open spaces

Solidarity between neighbors happen when they share common open spaces. Orienting building entrances to face one another improves the quality of these outdoor common areas and promotes regular and friendly interaction between neighbors. Implied or perceived boundaries within these common open spaces, promotes stewardship and lessens the threat of vandalism.

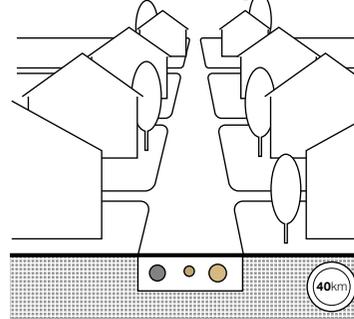
Mitigate environment impact and safeguard public welfare

Treat storm-water runoff on site through low impact development and environmentally sustainable techniques such as infiltration beds. Public infrastructure should be provided throughout the site to ensure proper disposal and treatment of wastewater. Access to public drinking water is vital to safeguard the health of inhabitants. Existing and mature trees as well as green areas should be safeguarded to mitigate urban heat island effect.

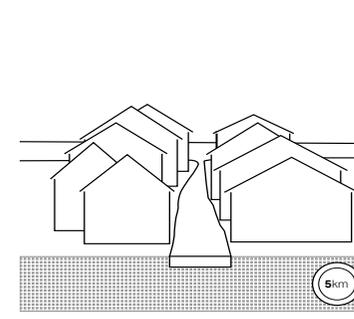
Design Strategy

Reflecting on the my study of the informal settlements, a new strategy is needed that merges the qualities of planned development and informal settlement. Within this new strategy,, principles of the informal settlements such as market corridors, and local meeting places should be created in addition, implementation of surveyed plots and public right of way is needed to ensure that public amenities may accessed by all. The following diagrams and text describe the qualities of both and conclude with my ideas of what the new developments should contain.

Planned Developments

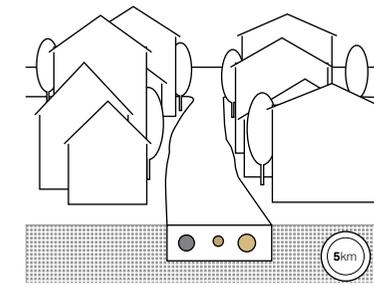


Informal Settlement



Best of Both

New Sustainable Development



Planned Developments

Public RoW (roads, utility corridors) designed for the safe movement of vehicular traffic and cost effective access to municipal infrastructure.

Developments tend to be large scale and utilize the expertise of city planners, engineers, and economists. Construction methods often require a skilled workforce and materials that are transported long distances. To construct cost effective housing, building plans favor repetitive floor layouts and minimal variations in form.

Financial backing by central bank and / or private lenders to cover up front costs and are vital to finance ongoing construction. Upon completion, houses or apartments, are sold to home buyers who often finance the purchase over a 30 year period.

Public outdoor spaces including recreational parks, ecological reserves and green corridors are planned and integrated into the fabric of city or community and function to safeguard the health and safety of city residents and the natural environment.

Informal Settlements

Roads and pathways are created overtime by residents travelling to and from common destinations. These corridors favor ease and efficient movement of individuals traveling on foot and favor flat or gentle slopes and renitent to ponding during the wet seasons.

Development is small by nature and funded directly by homeowner and approved by local council, through tribal custom. Local builders, called 'fundis' carry out the construction of traditional structures, which utilize common and readily available materials.

Development is directly funded by homeowner. Often buildings are constructed incrementally overtime due to the changing needs of the homeowner.

Public outdoor spaces for farming emerge within the settlement where unused land is available. These spaces provide agriculture that is either consumed by the farmer or traded within the local economy.

Best of Both

Developments should prioritize pedestrian movement and capitalize on existing movement patterns to strengthen local connections and urban fabric.

Once movement corridors are recognized, planning of acceptable right of way and surveyed plots should be implemented to facilitate future public and private investment and upgrades.

Public outdoor spaces and environmentally sensitive areas should be defined and safeguarded against future private development.

Residential developments should favor small scale development on individual plots rather than block by block and undertaken by local contractor.

A NEW SETTLEMENT FOR THE KAWE DISTRICT

Site Location and Character

The neighborhood of Kawe is made up of four subwards, Ukwamani, Mzimuni, Mbezi Beach 'A' and Mbezi Beach 'B', and has a culturally and socioeconomic diverse community with a total population of 67,115 (Ramanihuria, 2021). The neighborhood is approximately 18 minutes north of the central business district (CBD), making Kawe an excellent location for new development for those who commute to the CBD for employment.

In the center of this neighborhood is the former meatpacking factory and grazing lands, which has been vacant of industrial use since in 1993. The remnants of the former factory, including the meatpacking and infrastructure buildings remain standing, have been put to good use by the local population which has been repurposed as a central gathering area for concerts and weekend spiritual gatherings which attract a large number of people.

In addition to organized gatherings, the large expansive open space of the site is used by the local population who regularly utilize the space as sports pitches and have adapted small areas for agricultural purposes. Roadside markets and small cafés have also emerged on the southwestern side of the site, providing evidence of the presence of a small local economy. From satellite imagery, we can clearly view the many pathways that cross the site showing the connectivity from the informal parts of the Kawe neighborhood to the more developed coastline. Among the main destinations that appear from this aerial observation would be the beach, local markets, transit hubs, sports pitches, and the meatpacking factory.

There is a great mixture of land-use within

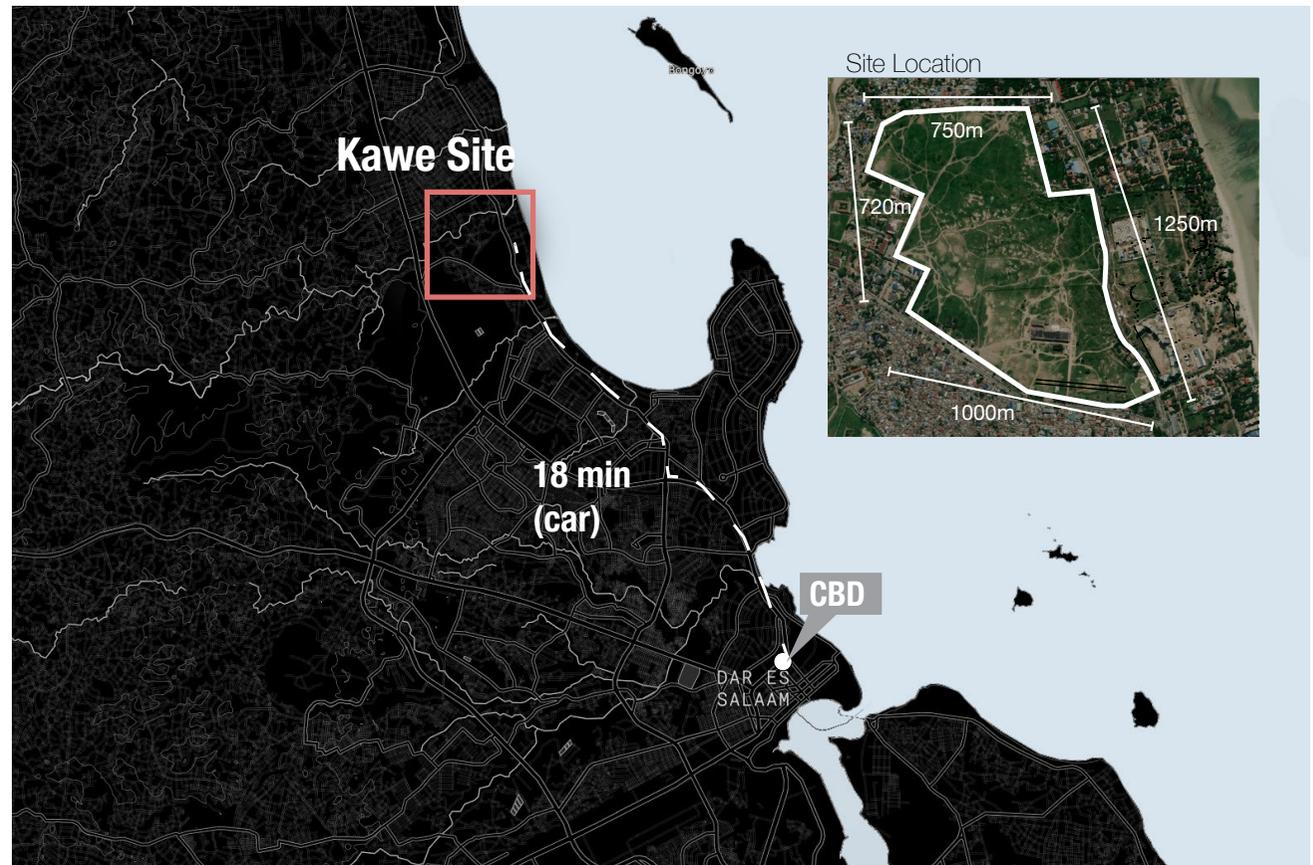


Figure 1.25 Location of the Kawe Meatpacking Factory and project Site. NTS

immediate surroundings. The project site is flanked by informal settlements, low and medium planned settlements, and more recently high-rise apartments which are beginning to emerge on the coastline. With the projected growth of Dar Es Salaam, large scale developments are enviable and the Kawe site would be a prime location for medium and high end housing. Such plans have already been drawn up by the National Housing Commission (NHC), which is the current landowner. However this new master plan, which shares

characteristics master-plans conceived during the last century does not appear to offer anything for those living outside of these gated communities. This outdated approach, which may be economically sensible for the NCH and their vision, does not take into consideration the needs of the surrounding community, namely those living in the informal settlements.

The diagrams on the proceeding pages present the Site Context, Land-Use and Natural characteristics in further detail.

Site Context

Legend

-  Buildings
-  Factory Grounds
-  Educational
-  Recreational
-  Commercial
-  NHC Future Development
-  Limit of NHC Property

Natural Features

-  Beach
-  Water
-  Wooded Area
-  Flood Plain

Cultural Features

-  Mosque
-  Church
-  Library
-  Clinic
-  Bus Stop
-  Picnic Area



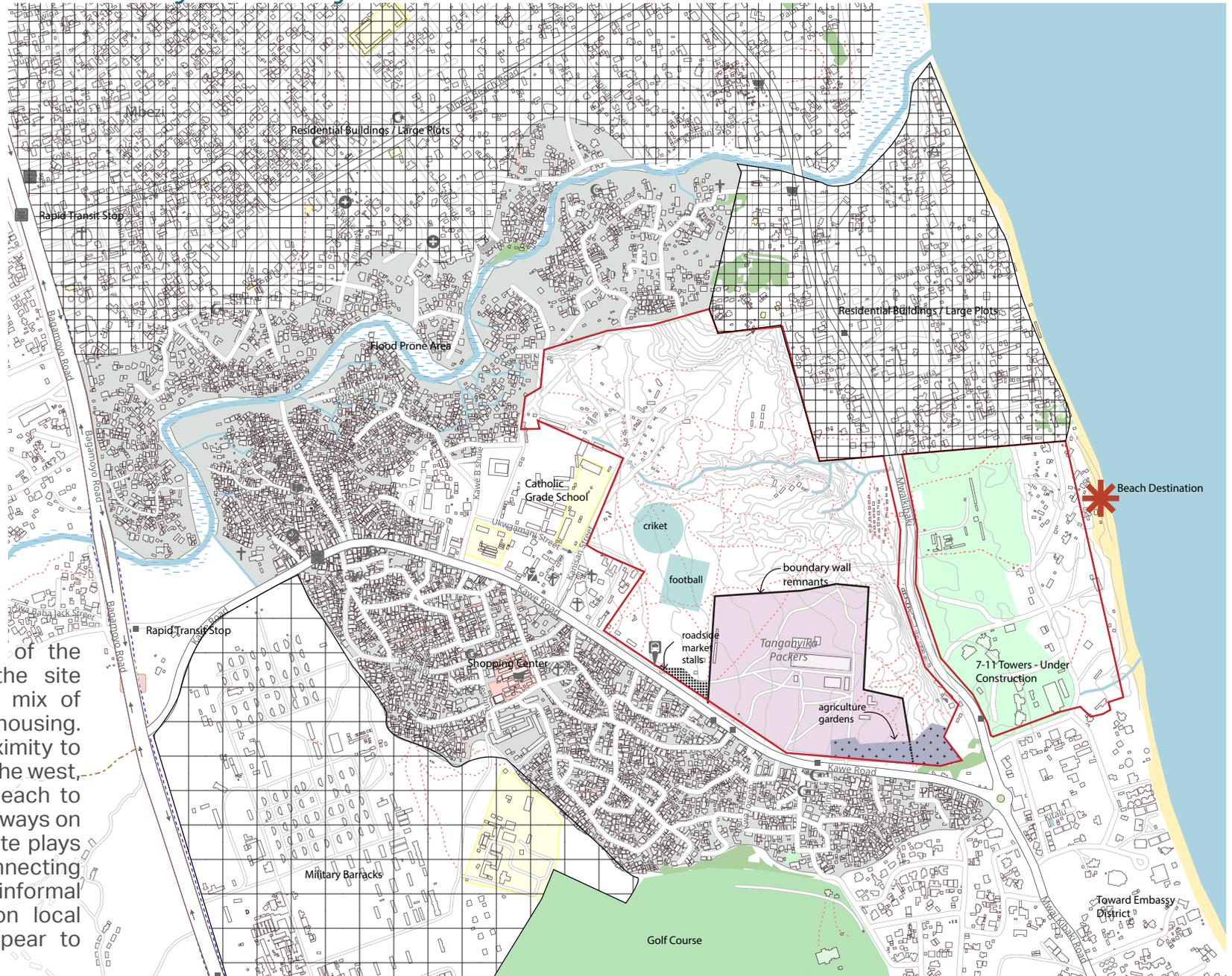
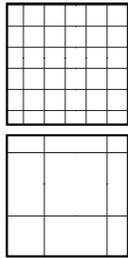
The project site in the context of the surrounding neighborhood remains as one of few large publicly accessible openspaces in the Kawe district. The site is surrounded by planned and unplanned housing on all sides.



Inventory & Analysis

Legend

- Informal Steeplement
- Factory Grounds
- Educational
- Green Areas
- Commercial
- NHC Development
- Agriculture Gardens
- Roadside Market
- Residential Large Plots
- Military Housing
- ✳ Public Beach Access
- - - - - Pathways



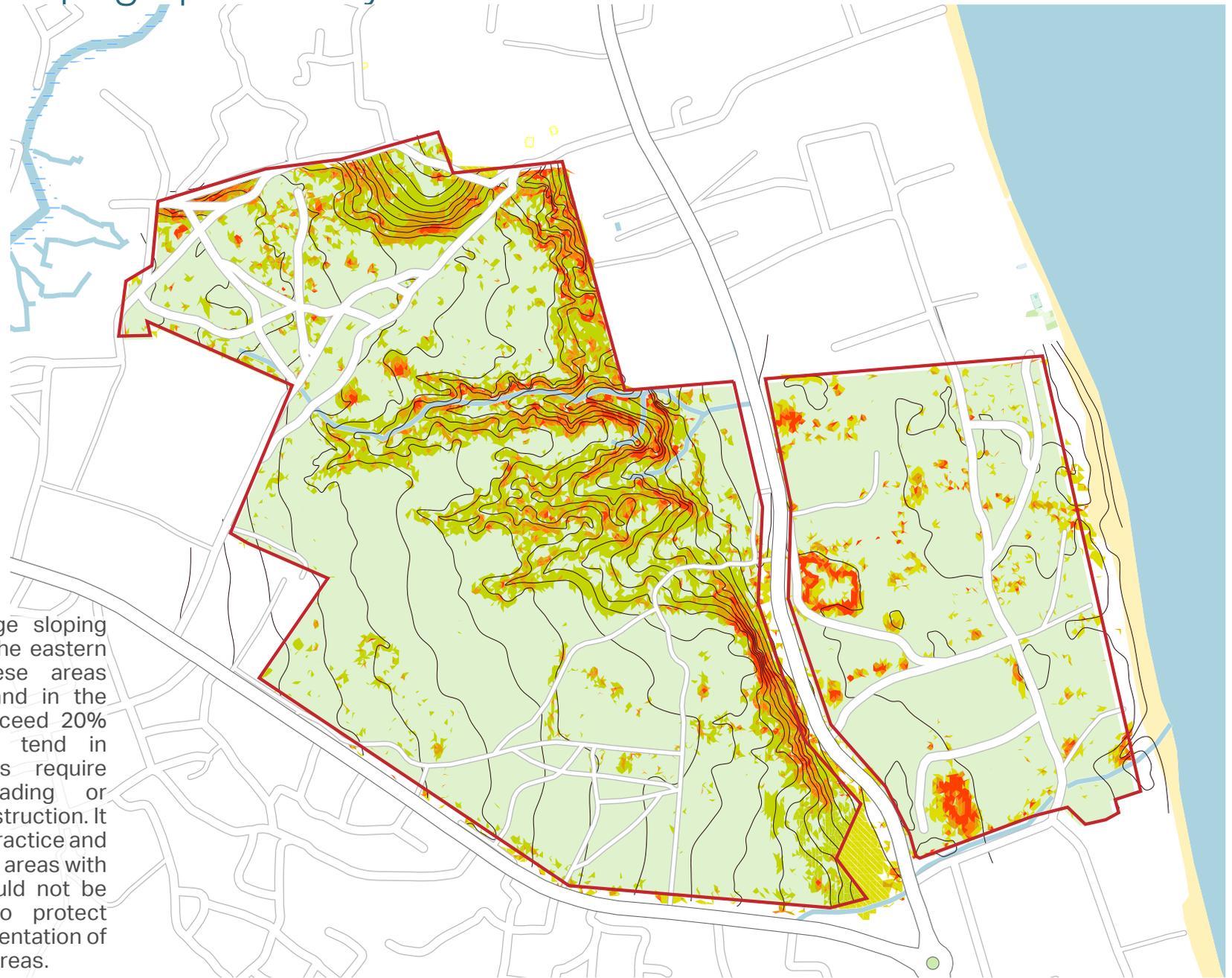
Inventory and analysis of the surrounding area of the site shows that there is a mix of planned and unplanned housing. The site is in close proximity to the Catholic School, to the west, as well as the public beach to the east. The many pathways on may indicate that the site plays an important role in connecting inhabitants from the informal settlements to common local destinations, which appear to be many.



Topographic Analysis

Slopes Table

- 1 - 5%
- 5 - 10%
- 10 - 15%
- 15 - 20%
- >20%
- 1m Contour



The site contains large sloping terrain in portions on the eastern boundary. Within these areas slopes exceed 10% and in the most severe cases exceed 20% sloping. Development tend in severe terrain slopes require modifications in grading or innovative building construction. It has become common practice and generally accepted that areas with excessive sloping should not be disturbed in order to protect groundwater and sedimentation of river beds and coastal areas.



Site Photos Location

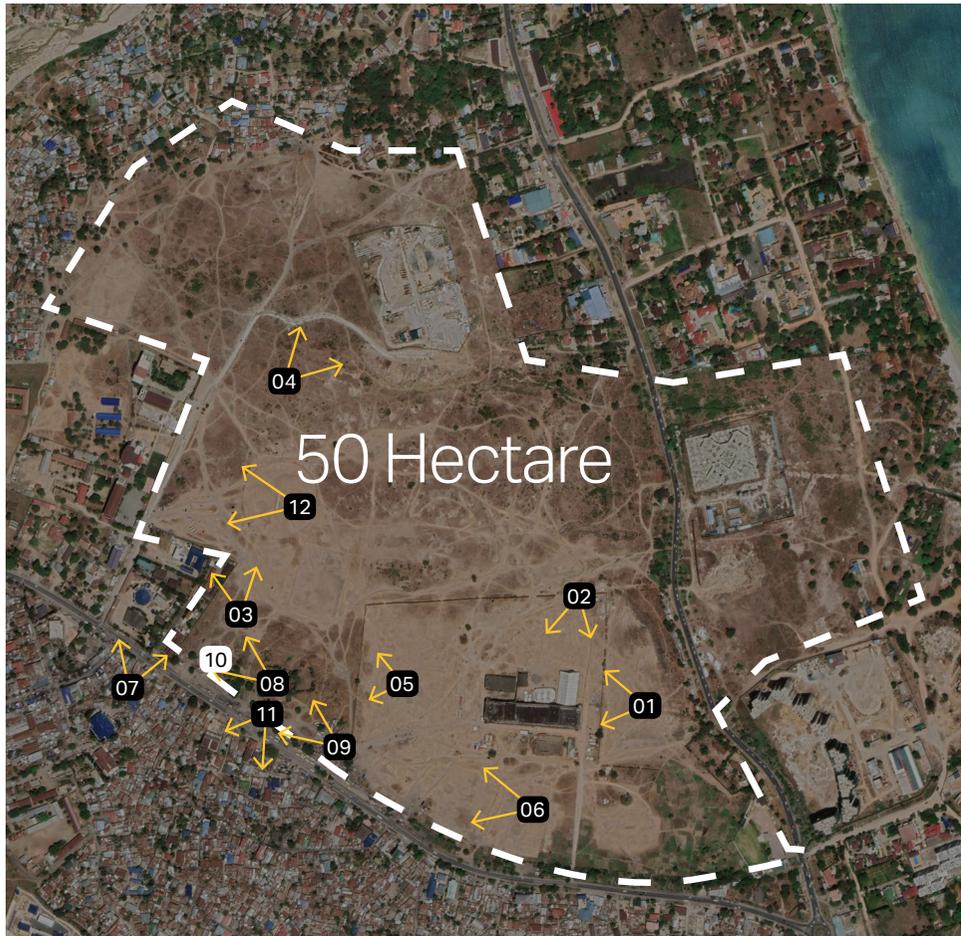


Figure 1.26 Survey Images Map. Source: (Google Earth, 2021)

The photographic survey was conducted by Tumainieli Naychan in October 2021. Naychan, a student of Industrial Design at Ardhi University, in Dar Es Salaam, participated in the Urban Shelter (ASBN11) course as a student representative of Dar Es Salaam and answered many questions about the life in the informal settlements.

Site Photos (1-3)



Site Photos (4-12)

4



7



10



5



8



11



6



9



12



Site History

From the end of the second world war to the mid 1960's Dar Es Salaam's economy grew considerably with the assistance of foreign investment which sought to establish new trade routes to Europe. The Tanganyika Packers Ltd (TPL) was a British owned company and Tanzania's only export-oriented slaughterhouse and beef-canning factory which established its industrial center in 1947 in the area of Kawe. At its height, this industry anchored a working-class community of roughly 1200 worker and offered an outlet for Tanzanian cattle farmers.

During the 1960' Tanzania underwent a restructuring of government reform which sought to nationalize large companies which challenged foreign investment in the country. This nationalization of the meat packing industry and growing competition from other meat producing countries weakened the Tanzanian meat industry and by 1975, TPL began to show signs of weakness. By 1993, TPL had abandoned operations in the Kawe factory. The remains of the industry can be seen in the concrete buildings, which have since been stripped of all valuable materials. However, the site remains an important area for local residents who use the site for recreation and large social gatherings.

In 2015, the National Housing Commission acquired the former meatpacking grounds and have since created a master plan for the site which includes large shopping mall, luxury hotels, and low and mid-rise buildings that will

1947 - 1975



Tanganyika Packers Ltd (TPL) was Tanzania's only export-oriented slaughterhouse and beef-canning factory. 1200 worker and anchored a working-class community and offered an outlet for Tanzanian cattle farmers.

Image Source: (Thaddeus, 2018)

1975 - 1993



The long decline of the meat factory ended in 1993 and slowly fell into decay.

Image Source: <https://hilaryduff.exposure.co/tanganyika-packers-history-exploration>

2015



The National Housing Corporation (NHC) acquired the 50 hectare site. Since 2015, NHC begun construction on the 7-11 towers, located adjacent to the beach, however construction has recently stalled due to lack of funding.

Image Source: https://www.youtube.com/watch?v=cv9Ki8ae07w&ab_channel=RemyLupamba

Future Plans



The future of the Kawe meatpacking site is uncertain, however NHC has prepared a Masterplan for the entire site which includes luxury hotels and shopping malls.

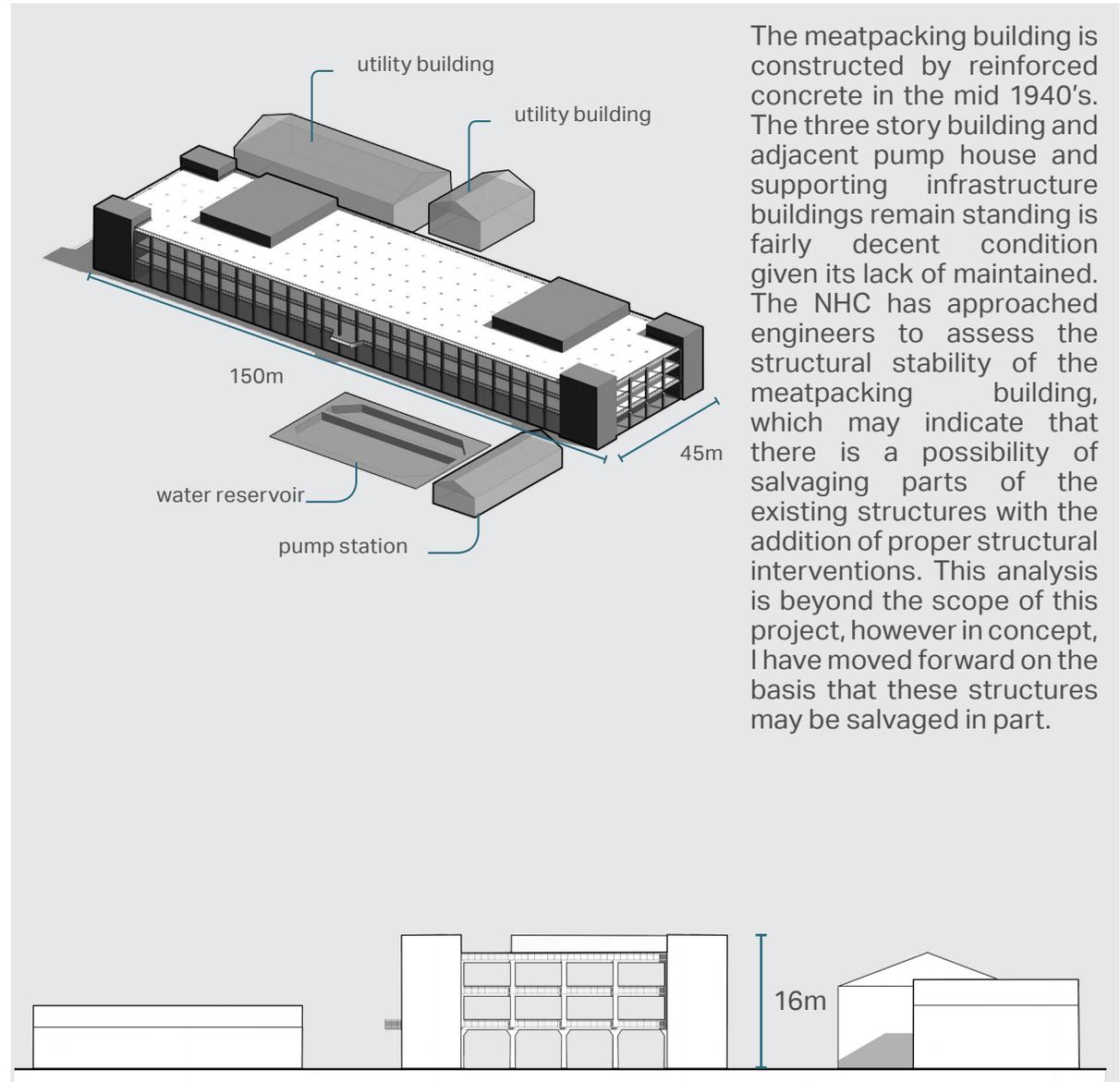
Image Source: <http://philsinternational.com/Uptown%20Kawe/default.html>

likely be marketed to the middle and upper classes. Some construction has begun with the Seven Eleven Towers, however construction of this site has stalled due to lack of investment. This slowing down of construction activities may indicate that the local economy may not be prepared for such a high end luxury housing market as was once speculated by its developers.

Factory Compound



Image sources: 1) https://www.youtube.com/watch?v=cv9Ki-8ae07w&ab_channel=RemyLupamba, 2 - 4) : <https://hilaryduff.exposure.co/tanganyika-packers-history-exploration>



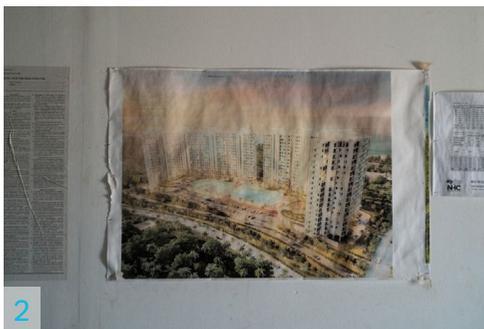
The meatpacking building is constructed by reinforced concrete in the mid 1940's. The three story building and adjacent pump house and supporting infrastructure buildings remain standing in fairly decent condition given its lack of maintenance. The NHC has approached engineers to assess the structural stability of the meatpacking building, which may indicate that there is a possibility of salvaging parts of the existing structures with the addition of proper structural interventions. This analysis is beyond the scope of this project, however in concept, I have moved forward on the basis that these structures may be salvaged in part.

Local Culture of Kawe



Image 1 and 2- Regular Sunday religious gatherings held inside of the Meatpacking factory often fill up the ground floors and spill outside into the surrounding open-spaces. Image 1 and 2 Source: <https://www.instagram.com/explore/locations/237096536/tanzania/dar-es-salaam-tanzania/kawe-tanganyika-packers/?hl=fr>

Image 3 and 4: Public beach of Kawe are in close proximity of the meatpacking factory and are regular destination for local inhabitants. Image source: 3) Nichole Sobecki (Rosen, 2019); Image 4) <http://www.winnerphotographer.com/>



One of the main attraction of the surrounding Kawe neighborhood is the meatpacking building, which is the location for many weekend concerts and religious gatherings. As you can see from the photos (opposite page) many participate in the large gatherings which appear to occur frequently.

When the grounds are not hosting events, locals gather to play cricket and football in the open fields in front of the meatpacking building.

Close to the site is a public beach which is accessed by many living in the informal settlements.

In recent years, the NHC land has begun development on a the '7-11' tower complex. Due to shortage of funding, NHC decided to hold on further construction and prioritize other ongoing developments within Dar Es Salaam. It is unclear when construction will resume, however this change in program may indicate the softening of high-end housing market within the area. Should this be the case, NHC may have to revisit their overall master plan for the 50 hectare site which, if constructed, would house luxury hotels, shopping mall, and medium and high end apartments and villa housing.

Adjacent to the Kawe site, the 7-11 towers, an ambitious project by the developer NHC had begun construction in early 2014. Due to lack of investment, the project has stalled in recent years, indicating that the luxury housing is not in demand as anticipated. For now the vision of the towers remains just rich imagery placed on the office walls of the NCH developer, as the bare concrete structure awaits an uncertain future. Image sources: Image 1) <https://www.ippmedia.com/en/business/chinese-developer-caught-nhc-kawe-satellite-city-project>; Image 2&3) Nichole Sobecki (Rosen, 2019).

Design Application

After concluding analysis of Informal Settlements, I devised a strategy that utilized the existing movement patterns and cultural uses of the site. My approach sought to integrate the new development within the existing fabric of the adjacent informal settlement, and would ensure the continued access to neighboring residents. I break down my strategy into the following four categories; land features and pathways, spatial requirements, enhance existing generators, and preserving site identity.

Land Features and Pathways

Assessing the physical qualities of the land and location of pathways crucial in determining the existing movement patterns and future structure of the development. Using my slope analysis, I determined the location of good quality land, which by definition, is not prone to flooding and is below 5% slope.

In addition I recognized the existing urban farming locations, and locations of trees on site. The urban farming was an important existing asset, that would be utilized in the future development.

It is difficult to assess the current quality of the Meatpacking building, however, I my discussion with NHC, there was an ongoing investigation conducted by local structural engineers to determine the feasibility of retaining the built structure.

Spatial Requirements

The dimensions pathways and roads in unplanned settlements often conflict with municipal standards, which require sufficient width to incorporate subsurface drainage and utility provisions. Widths of Right of Ways were determined by referencing municipal standards. In summary the national standard are as follows:

Enhance Existing Generators

The major generator of visitors to the site is the meatpacking building which provides a central location and meeting place for visitors. Additionally the agricultural gardens located on site also generate visitors and promote stewardship of the land. These are both valuable assets and generators of visitors to the site and should be preserved and enhanced to safeguard the activities these environments provide. Enhancement of the these assets, such as structural upgrades and safe access to the factory building as well as enlargement of the gardens could generate more visitors to the site.

Unique Identity

The preservation of the Kawe meatpacking building will bridge a connection to the history of site, making



Pathways & Connections	Recognition of existing connections and destinations through site
Existing Generators	Preserve and enhance local generators (I.e. Meatpacking Bld., Sport and Market Locations)
Spatial Requirements for Infrastructure	Locally approved standards for public ROW determine spatial requirements
Unique Identity	Connection to historical roots (Architecture and cultural Relics, Beach Proximity)

it among the oldest surviving and most iconic structures of the Kawe neighborhood. Further investment into the structure could elevate the possibilities of using the space for outdoor markets, and large concert gathering on the ground floor, and technical training center and youth center on the upper floors.

National Standards Public RoW	
Access Roads	10 - 20m
Foot paths	3-6m

Figure 1.27 source: MAGIGI, 2005



Existing Assets

SPORTS, RECREATION AND LEISURE
EDUCATIONAL, SPIRITUAL
MARKETS, AND SMALL BUSINESS
GARDENS AND AGRICULTURE

Paths & Destinations

VEHICULAR ROUTES
PEDESTRIAN PATHS
TRANSPORTATION NODES

Land Quality

STEEP SLOPES
FLOOD PRONE AREAS
GREEN ASSETS

Site Plan

LEGEND

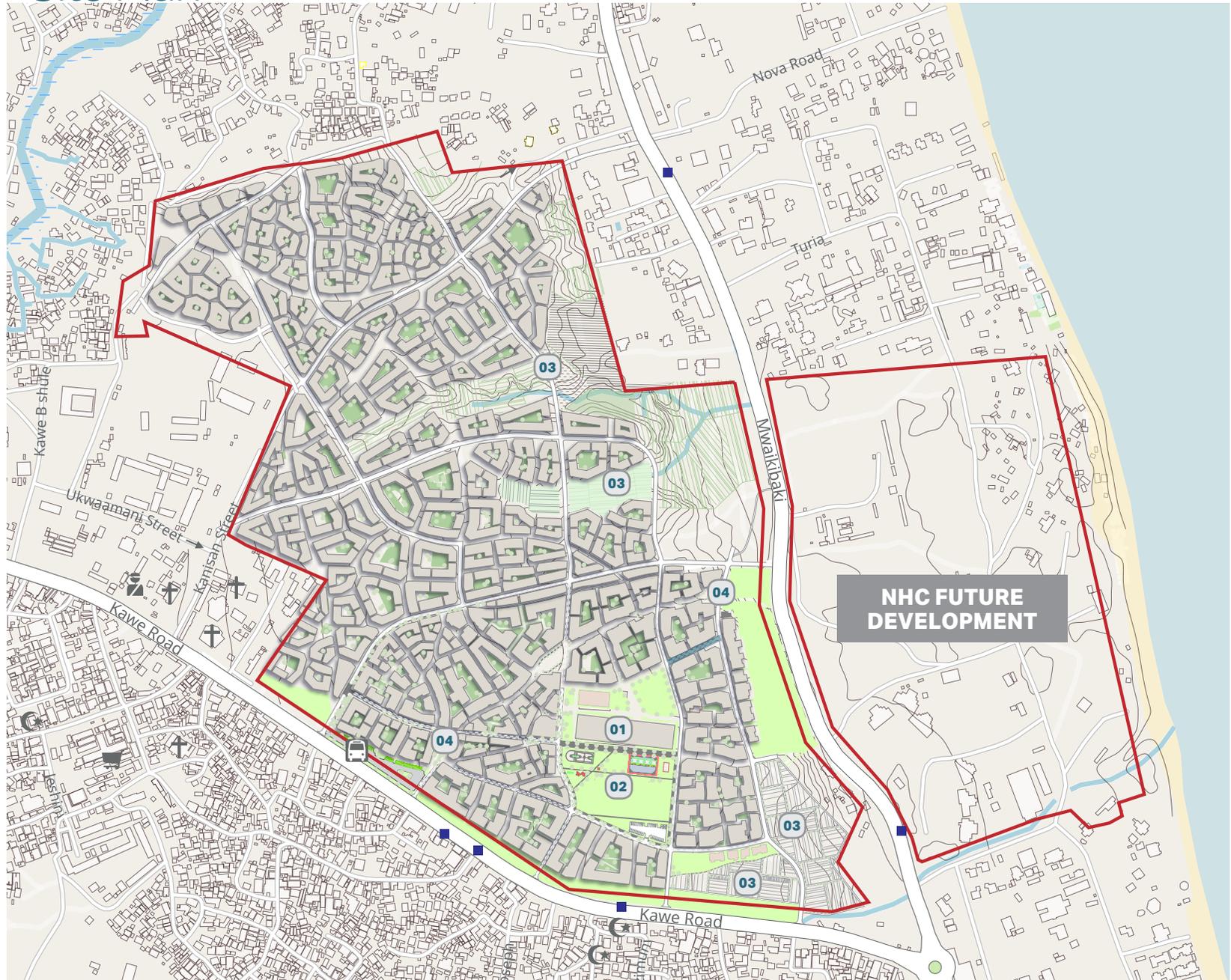
- 1. MEATPACKING BUILDING
- 2. SPORTS GROUNDS
- 3. AGRICULTURAL GARDENS
- 4. MARKET STREET PLAZA

2 LANE ACCESS ROADS

ONE WAY LOCAL ROADS

MARKET STREETS

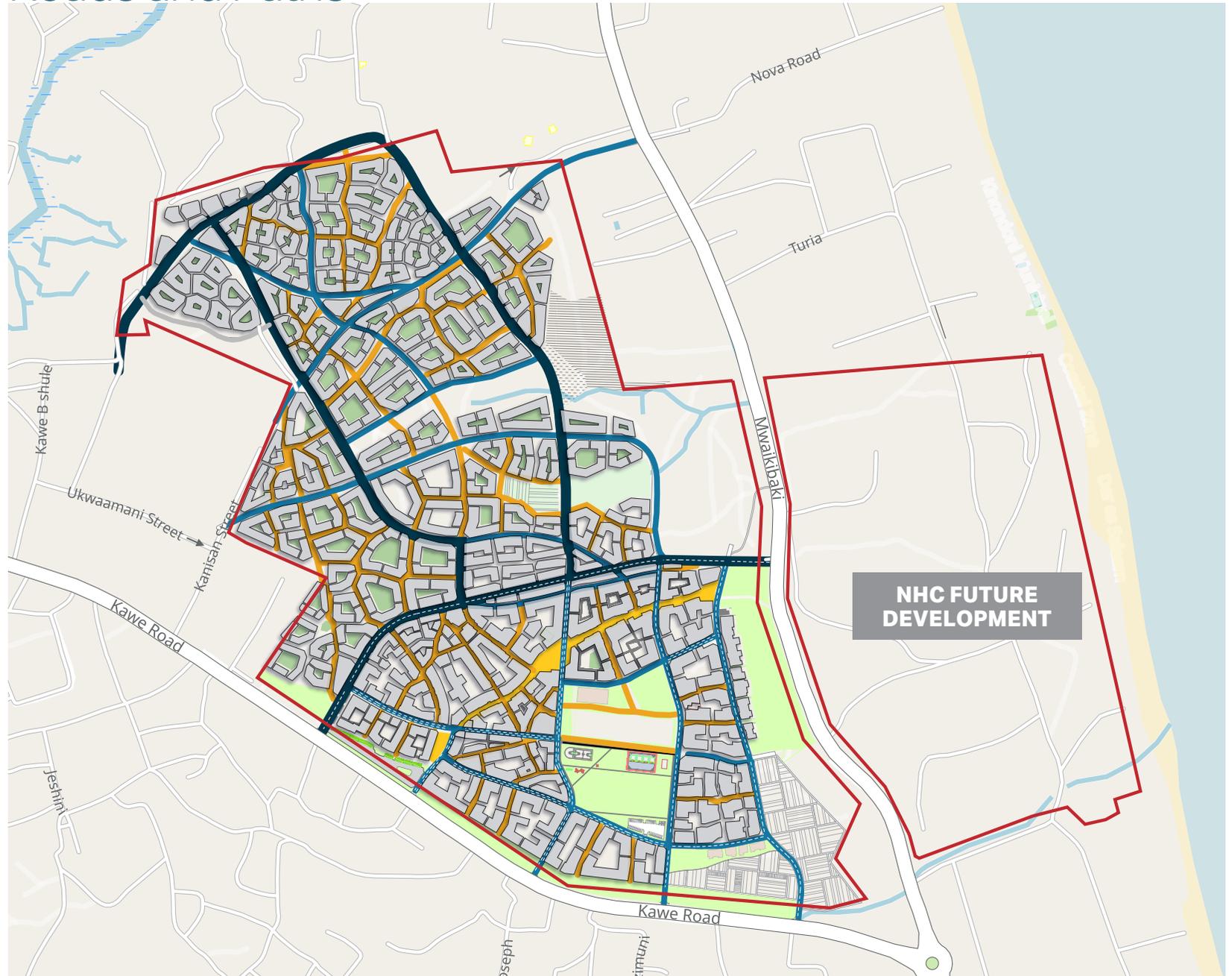
PEDESTRIAN CORRIDOR



Roads and Paths

Legend

- Collector Road (2 lane)
- Access Lane (1 lane)
- Paths
- Market Street
- Market Plazas



DETAILED SITE PLAN

LEGEND

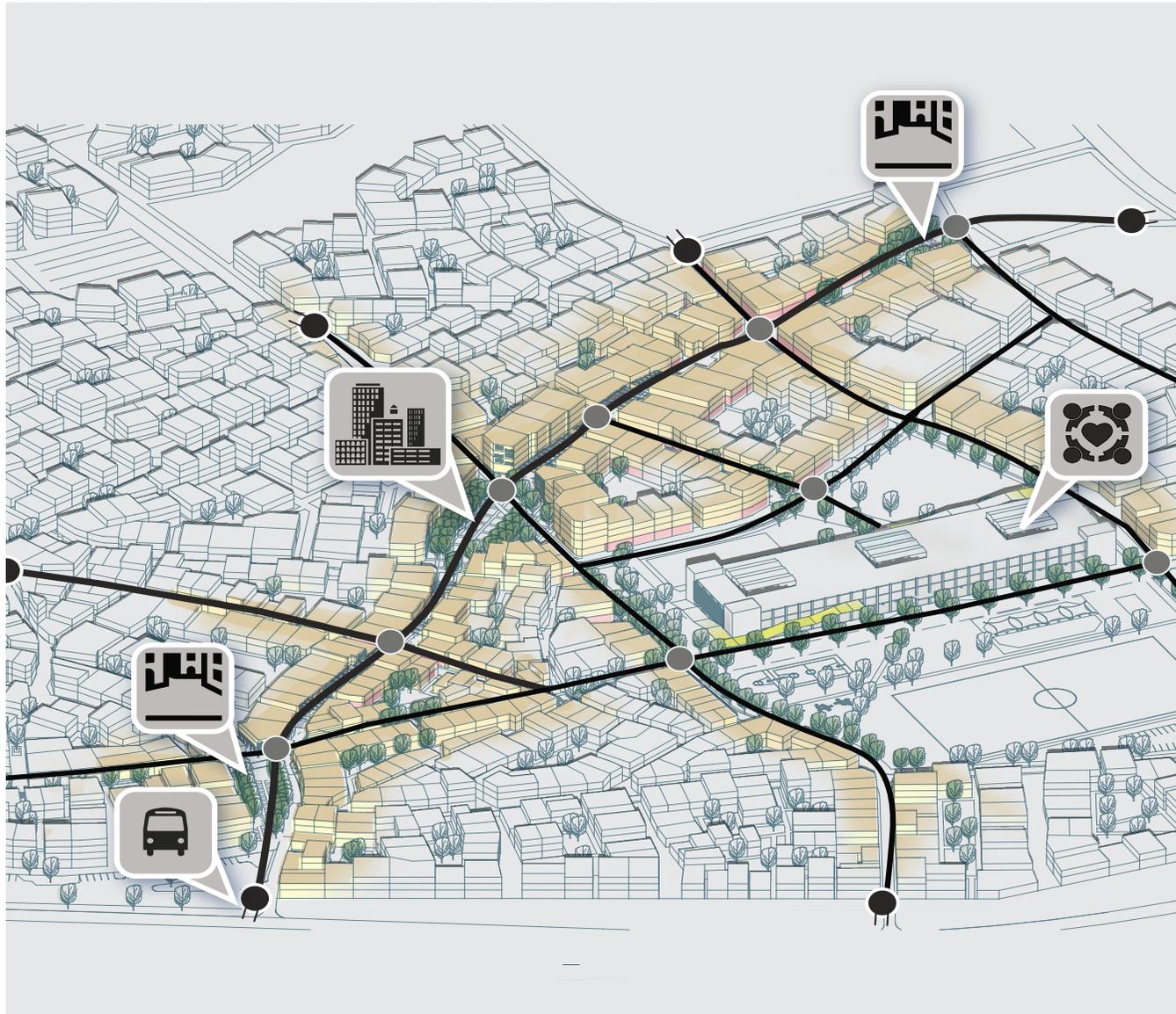
- 1. MEAT PACKING BUILDING / COMMUNITY FACILITY
- 2. PUBLIC POOL
- 3. FOOTBALL PITCH
- 4. AGRICULTURE GARDENS
- 5. PUBLIC PLAZAS
- 6. ROADSIDE MARKET

-  VEHICULAR CARRIAGEWAY
-  PROMENADE / MARKET STREET



SCALE 1:4000 

CONCEPTUAL APPROACH



The market corridor runs through the site linking the existing informal settlement to the beach. This corridor is terminated at each end with an important transportation node which connects the local population with the greater city and serves as a point of entry or departure for daily commuters. Along the market corridor there are local shops and cafe where local residents can find their daily needs. Located midway along the length of the market corridor is a commercial center which is the location of the offices and high end medium and high-rise towers. The central plaza, which measures 25 meters in width is appropriately scaled for larger gatherings and serves as a location for weekend event and outdoor market gatherings. In close proximity the central plaza is the former Meatpacking factory which has been re-purposed as a community center which provides public space for youth and adult education, as well as space for the community events and church gatherings.

Market Plaza

The Market Street is envisioned to be the center of everyday community life where residents as-well as visitors move through the winding street of the Kawe Neighborhood. A variety of small shops providing a range of goods and services ranging from fruit and vegetable and to restaurants, cafe, as well as salons and electronics are located along the main street and side streets. Above the shops, residential apartments ranging from 2 to 3 floors on the periphery edges of the site and gradually increase in height closest to the 3 market plazas. The three Market Plazas located approximately in 150m distance from one another give users a break from the narrow passageways on the market street. The widened plazas also contribute to increased thermal comfort by allowing cross ventilation into the narrow pathways while blocking thermal radiation with tree canopies.

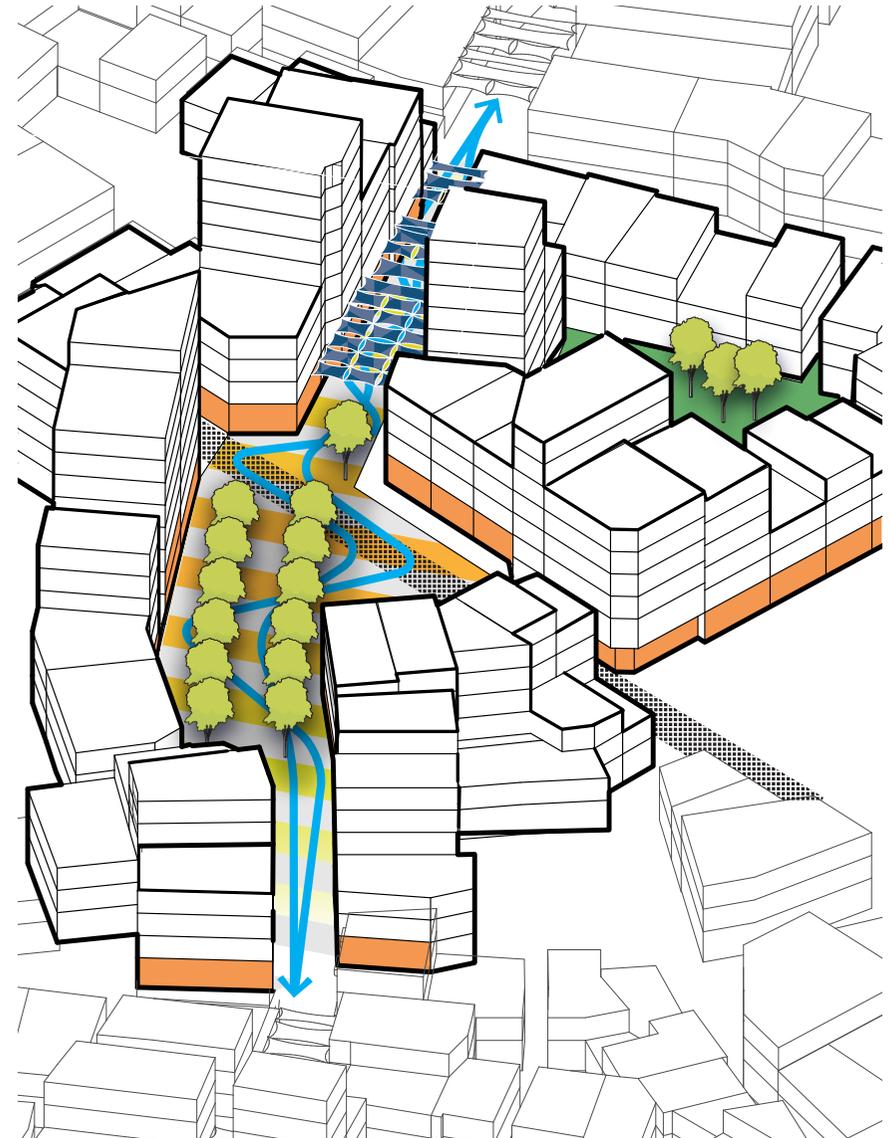


Figure 1.28 Thermal Comfort Considerations in Market Plaza

Local Meeting Places

The primary pedestrian pathways within the Kawe neighborhood occur along the market streets leading toward the transportation nodes to the west and seaside to the east. Within the settlement secondary pathways connect residents to the market streets and access roads of the neighborhood.

Shared green open space located throughout the interior courtyards of building compounds function to infiltrate storm-water, and offer local meeting places and flexible outdoor spaces.

Similar to outdoor spaces in the informal settlements, these spaces would be maintained by neighboring homeowners and governed by locally elected community leaders.

The lifestyle at the 5km/hour pace allows greater interactions between locals. There is also a greater variety of the qualities of these interactions, for example the market street would have a busy atmosphere with vendors selling goods, whereas within the courtyards, there would be a more tranquil and calm feeling.

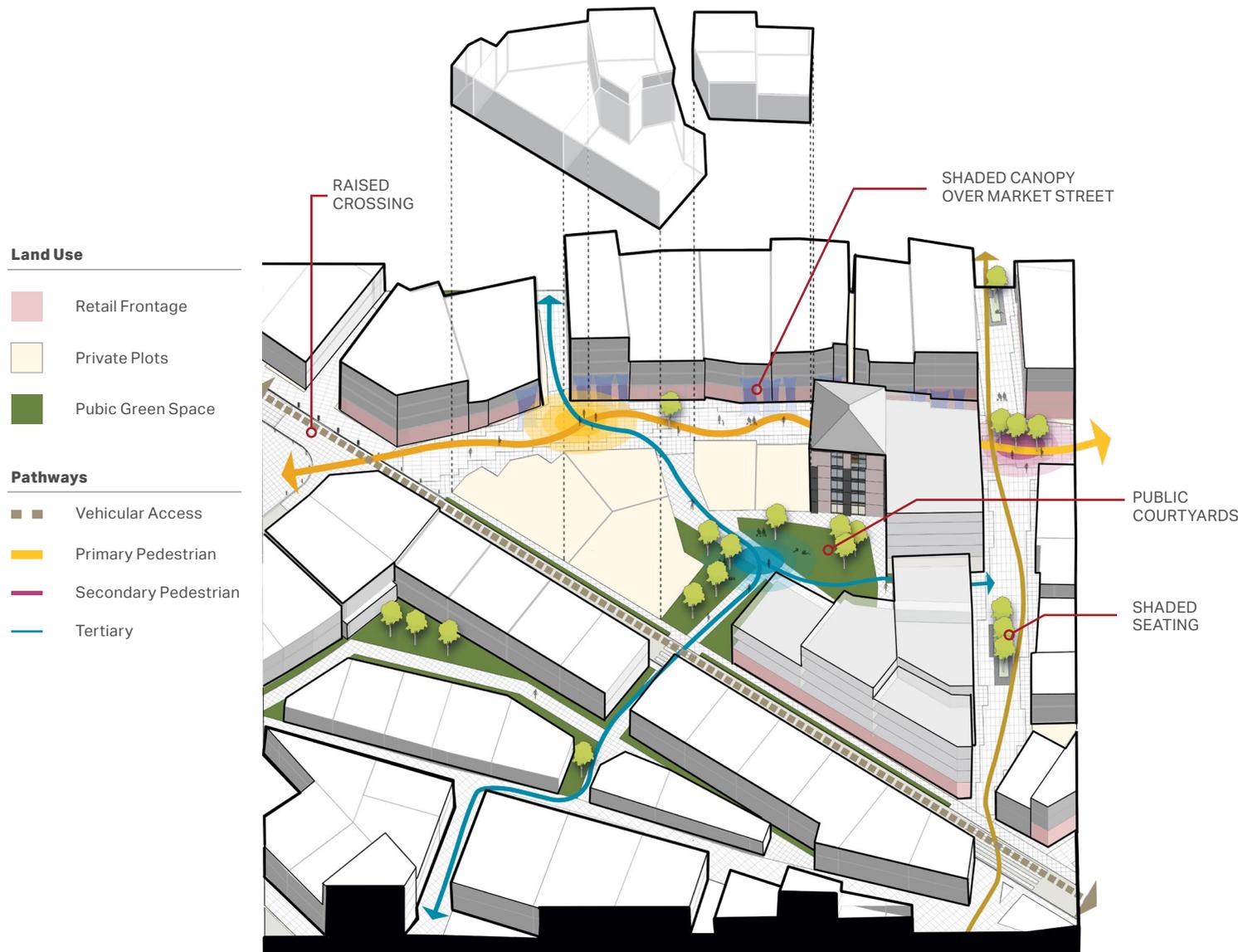


Figure 1.29 Green Courtyard provide third places for residents.

CENTRAL PLAZA



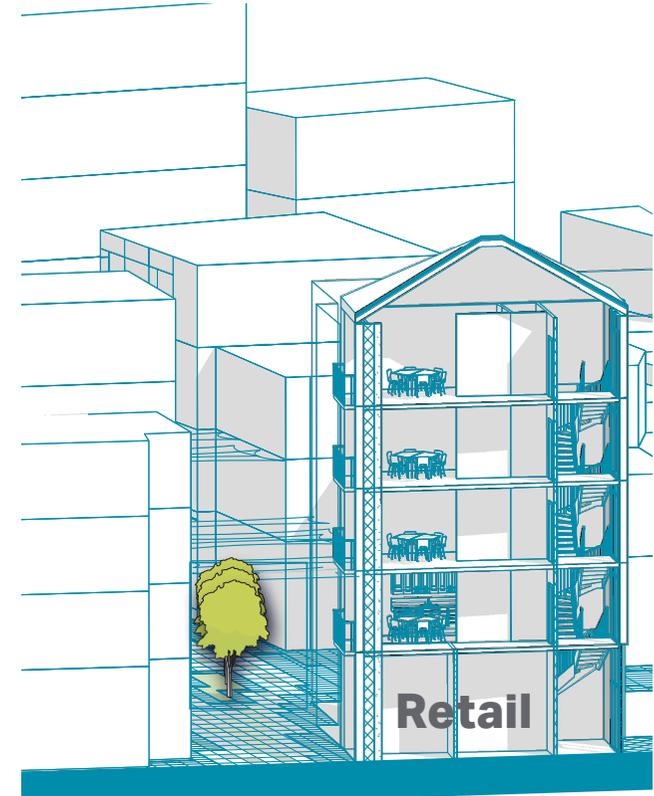
Figure 1.30 The Market Plazas allow cross ventilation into the market street and attract larger gatherings and seating opportunities.



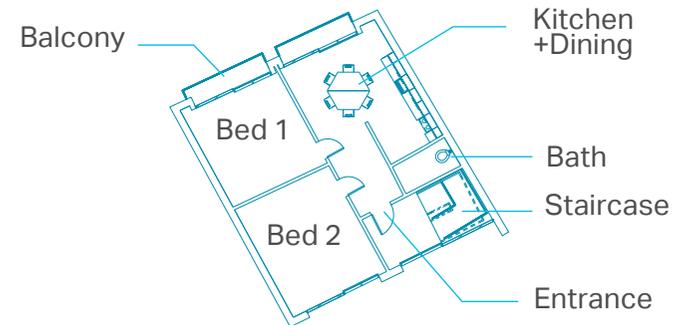
Figure 1.31 Rooftops activated for private gatherings and offer unique views into the Market Street.



MARKET STREET



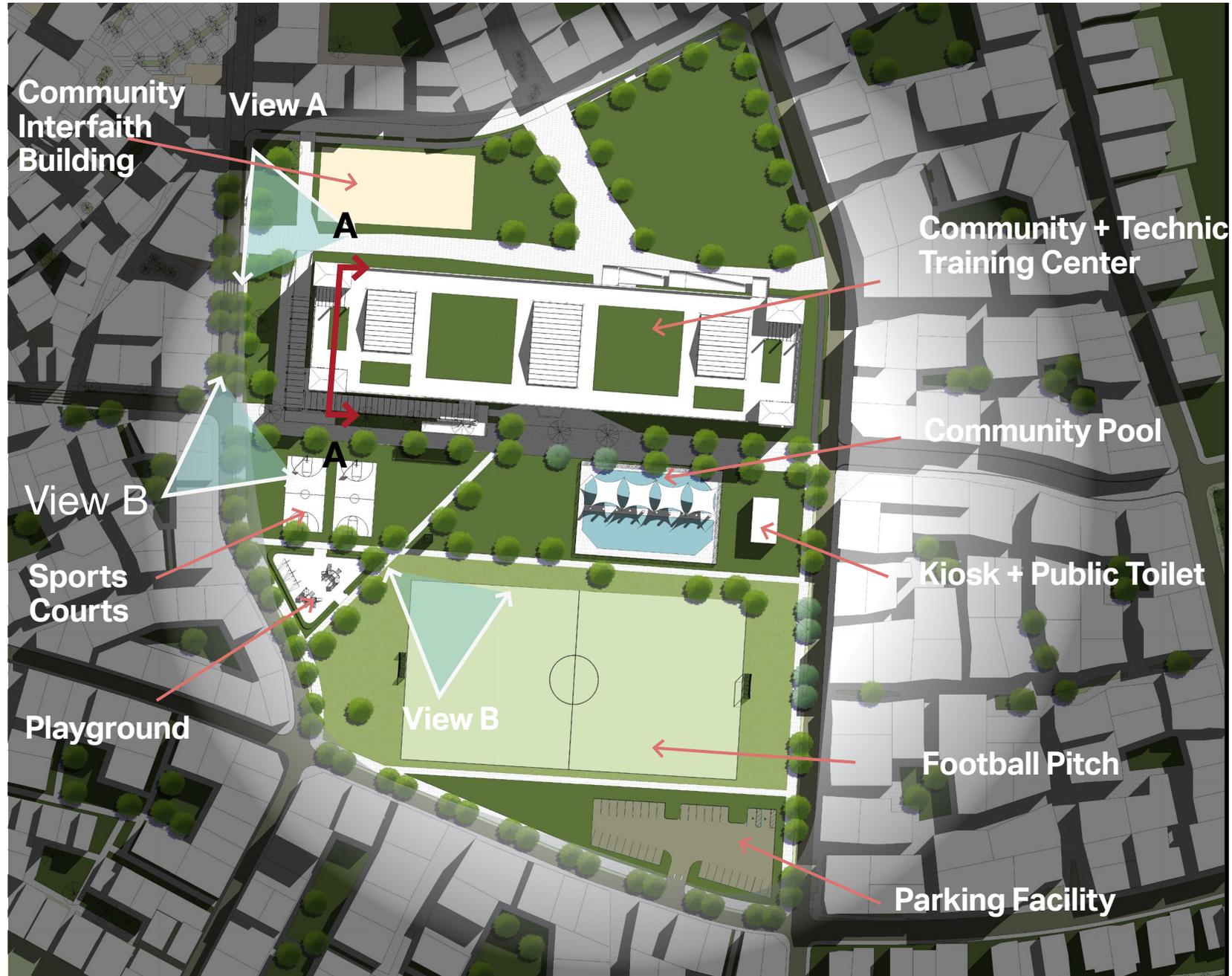
6.5m



Typical Apartment
75sqm



KAWE COMMUNITY PARK



Kawe Community Center

Meatpacking Bld. Spatial Programming

- Rooftop Cafe / with shaded seating
- Science Lab
- Library + Computer Lab
- Youth Center
- Workshop / Technical Training Lab
- Art and Craft Studio
- Administration Office
- Social Services

The historic meatpacking building will receive several upgrades including a pedestrian ramp which will allow residents to climb a gentle ramp to each of the building levels. The ground floor will resume its function as events space for religious gatherings and concerts. The second floor will be utilized for technical training for adults. The third floor will be utilized as a youth center and after school study space and will include a library and computer lab. The roof deck will include agriculture gardens and be used as an outdoor classroom.



Kawe Youth Center



View A



View B



URBAN AGRICULTURE PLOTS



CONCLUDING THOUGHTS AND REFLECTIONS

Solving the Housing Crisis in Dar Es Salaam

The challenge of providing affordable housing in the developing world is a complex issue that has continued to plague much of the African continent. This challenge will only multiply with the potential to become catastrophic for the people, environment and municipal government to manage if nothing is changed. It would appear that the municipal government has not sufficiently addressed this issue as unplanned settlements continue to grow at an average rate of 5% annually (Swai, 2020). This comes at a great cost to the environment and health of the citizens living within the many unplanned settlements of Dar Es Salaam. It would also appear that the instability of economy and government also play a factor in the capacity for the city to cope with provision of adequate housing for the lower income residents living in the growing city. The majority of the projects undertaken by the National Housing Commission of Tanzania focus on developments that are affordable for the middle and upper class. These large planned housing projects do more harm than good for the lower income population where gentrification and displacement push these residents further outside the city or to those areas already overcrowded within the city.

The proposal presented within this thesis represents a potential vision for future developments that prioritize the pedestrian over the vehicle. This approach demonstrates an alternative reality and unique vision that unites historical preservation with an adapted and enhanced characteristics of the informal settlement.

Learning from Informal Settlements

What can be learned from informal settlements to help create better and more livable communities? There are many aspects that have beneficial social and civil aspects that can be found in the daily life in the informal settlements.

First and foremost, we need to highlight that informal settlements have strong communities, which can be seen in how neighbors are able to maintain and improve their outdoor environments, share resources, and resolve disputes through appointed mediators.

The informal settlements, unlike planned neighborhoods, have an original and unique character in housing arrangement and varied façade designs that create a rich diversity of color and form. These spaces are created

through a process by many individuals which encapsulate a depth of design intelligence that respond directly to the needs of the users of the space. Unlike many planned communities found in the city, the development process of informal settlements occurs over long period of time and structures may be either constructed in phases or coupled together to best suit the evolving needs of the user.

Creating a walkable and safe environment not dominated by vehicular traffic. This increases the likelihood that outdoor public spaces will be utilized by soft mobility which in turn leads to a more vibrant street life.

Likewise, with a gentle nudge for pedestrian dominated street naturally creates local meeting places, or social nodes, where personal interactions between neighbors increases which has psychological benefits.

The new idea of creating the 15min neighborhood, where individuals are able to access all their daily need within 15minutes from their home, is a fairly contemporary idea that developed countries seek to aspire to. This is achieved naturally in the informal settlement and furthermore, benefits the local market economy. In the case of Manzese, this was shown in the market street being the main corridors for market activity and may be one aspect that clearly stands out in the informal settlement.

So why do informal settlements achieve almost effortlessly positive aspects of community design which developed countries strive to achieve the same outcomes? One reason for the success of the informal is prioritization of functions. Often in western countries, neighborhood design prioritizes accessibility of vehicular and emergency vehicular modes of access, whereas informal settlements prioritize development of spaces that are not used for accessibility, which is mainly pedestrian modes of use. By consciously avoiding siting buildings where pedestrian movement is obstructed, the informal settlement achieves greater permeability and gradually develops in a manner that complements the local movement patterns. This point may seem of little significance, but when compared to traditional city planning, we may see that the street grid, when applied to large portions of a city, takes little to no consideration of terrain or preferred and existing movement patterns of pedestrians. Furthermore, housing development which utilize the grid approach often become monotonous when undertaken by large developers which utilize a copy and paste approach to housing design and construction resulting in an outcome that is difficult to distinguish one street from another.

I realize that the Kawe site chosen for this project benefited from the existence of established pathways on the site which became one of the basis for the design response. The approach and synthesis of data may not always be available every site, however a key takeaway for community planning that should be emphasized is the importance of understanding the relationships that exist within the site. Specifically, when setting out to design a new site, it is important to note how local residents utilize the site and if they regularly pass through

the site to access local destinations. Understanding where the local destinations are and what needs of the neighboring communities have will go far in informing a well design site that will activate the spaces within the design site.

And in cases where you may not have a clear picture, it is best to place yourself in their shoes and ask how you or your family may utilize that site and what are your needs. Chances are that there may be many similarities between the basic needs of others and yourself



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