BEYOND SHELTERS

Designing Interventions to Foster Agency, Dignity, and Psycho-social Well-being in Zaatari

Hanen Mohammad

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ABSTRACT

This thesis explores the living conditions in "temporary" settlements established in response to the Syrian conflict. Specifically, the study will focus on three camps to better understand the challenges and opportunities in these spaces. The study examines the concepts of livelihood, agency, dignity, and psycho-social well-being in these "transient" settlements to assess their implications for refugees and host communities.

Livelihood refers to how individuals and communities make a living or secure the necessities of life. The study will examine how refugees make a living in the camps and whether there are any opportunities for them to build their livelihoods. Agency refers to the ability of individuals and communities to make decisions and take action on their behalf. The study will examine how refugees in the camps exercise agency and make decisions that affect their lives. Dignity refers to the inherent worth and value of individuals and communities. The study will explore what contributes to refugees' sense of dignity in difficult living conditions and limited resources. Psycho-social well-being refers to mental and emotional health and individuals' social relationships and supports systems. The study will examine whether the camp design, programs, and services support psycho-social well-being.

Additionally, the study will utilize Maslow's hierarchy of needs to better understand how well refugee camps are designed and whether they adequately fulfill the full spectrum of human needs. Maslow's hierarchy of needs is a theory that suggests that human needs can be organized into a hierarchy, with basic physiological needs at the bottom and higher needs, such as self-actualization, at the top. The study will examine whether the camps provide for basic physiological needs, such as food, shelter, and healthcare, as well as higher needs, such as social belonging and self-esteem.

Overall, this thesis seeks to comprehensively understand the living conditions in "temporary" settlements. By exploring the concepts of livelihood, agency, and dignity, as well as utilizing Maslow's hierarchy of needs, the study aims to assess the effectiveness of these spaces in meeting the needs of refugees and propose potential programmatic and design strategies to aid in fulfilling refugee needs.

THESIS STATEMENT

This thesis will investigate the issues of displacement and existing solutions to forced displacement and the refugee crisis. Forced displacement occurs when people and communities are coerced to abandon their homes or regular places of residence to avoid or cope with the impacts of situations like armed conflict, widespread violence, human rights violations, and natural disasters. (UNHCR). Displacement is a global crisis impacting 103 million people worldwide, 32.5 million of whom are refugees. This thesis will focus on the Syrian refugees, their journey, and the spaces they occupy to analyze the inter-subjective nature of their experiences to uncover the presence of livelihood, agency, dignity, and psycho-social well-being in refugee camps to understand how well the refugees' needs are met based on Abraham Maslow's Hierarchy of needs. Based on the analysis and research, the thesis will also propose potential interventions to mitigate refugee concerns.

As mentioned, this thesis is framed around the concepts of livelihood, agency, dignity, and psycho-social well-being in refugee camps. Maslow's Hierarchy of needs has been utilized to understand where these concepts fall in the pyramid of needs and to understand how well refugees' needs are met in camps. These concepts are defined as follows.

Livelihood is defined as the means of securing life's necessities, including food security, supportive dwellings, protection from elements, employment, education, and recreation. **Agency** is when a person is in control over their actions and their consequences. Some of the factors that indicate agency include the ability to support oneself, the ability to move freely, and the ability to personalize one's spaces. **Dignity** is a person's right to be valued and treated ethically. In spatial terms, access to proper infrastructure, adequate living conditions, protection from elements, and access to recreational spaces can increase a person's sense of dignity. Finally, Psycho-social well-being "incorporates the physical, economic, social, mental, emotional, cultural, and spiritual determinants of health" (Kumar).

Maslow's Hierarchy of Needs is a motivational theory in psychology that proposes a pyramid-like model of human needs. The model consists of five tiers that are arranged hierarchically. Starting from the pyramid's base, the first need is physiological, which includes necessities like food and clothing. The second need is safety, which involves the need for job security and a sense of stability. The third need is for love and belonging, which includes the desire for friendship and social connections. The fourth need is esteem, which involves recognition, respect, and a sense of achievement. The final and highest need is self-actualization, which involves the desire for personal growth and fulfilling one's full potential. According to Maslow's theory, individuals must fulfill lower-level needs before focusing on satisfying the needs at the higher levels.

"International organizations such as UNHCR, Red Cross, AWH and others are playing a key role in providing strategic, organizational and practical support for establishing and managing refugee camps" (Rooij et al. 3). While the

UNHCR prefers to resettle, repatriate, or integrate refugees, host communities gravitate towards camps for safety reasons and due to the political nature of the crises. The aim is to contain refugees and reduce tensions between them and host communities because refugees are forced to flee to resource-scarce counties with preexisting social and political conflicts. In his book Displacements Architecture and Refugee, Andrew Herscher argues that when countries perceive refugees as potentially able to contribute to the workforce, the solutions become oriented toward the city. When they are perceived as potential citizens, it is oriented toward housing. However, when they are perceived as neither, the architecture is oriented toward camps (Herscher et al.).

"Refugee camps appear to be, in fact, emerging urban environments, of which the aimed-at temporary status often prolongs into a long-term settlement – with populations often equaling regular cities" (Rooij et al. 3). While camps are intended to temporarily house refugees, the truth is that they often prolong into inadequate long-term settlements where refugees live in poor living conditions (150 SF space), have limited resources, lack education, and are prone to long-term displacement as they can remain in camps for decades. "Refugee Camp dwellers suffer from isolation, insufficient open space providing nature and recreational values, a lack of purposeful occupation and social interaction, and a sense of dependency from external support" (Rooij et al. 3). Refugees lack livelihood opportunities, a sense of agency, and dignity which, according to Maslow's Hierarchy of Needs, is critical for humans to feel a sense of fulfillment.

Therefore, this study attempts to understand the spatial, social, economic, and phenomenological aspects of the three camps: Oncupinar in Turkey and Azraq and Zaatari in Jordan, which house Syrian Refugees. The aim is to better understand the four following elements.

1. What elements and spaces contribute to a person's livelihood?
2. How to design interventions that foster agency?
3. What spaces, programs, and design elements support psycho-social wellbeing?
4. What are the characteristics of dignified living spaces?

Despite the temporary nature of refugee camps, the dwellers, like all of us, have more than physiological needs and therefore require spaces, programs, and structures that allow them to have a more meaningful occupation in the camp. Refugees in Zaatari lack spaces, programs, and structures that contribute to psychosocial well-being. Some of the major concerns are the lack of shaded spaces; refugees are often exposed to the sun, which can negatively impact their physical and psychological health. Shading is crucial in improving living conditions, providing resting spaces, socializing, and gathering spaces. These concepts are all associated with a sense of comfort and dignity. Therefore, designing interventions that provide shaded spaces for refugees to gather, walk, rest, and potentially exchange goods and services is necessary to promote livelihood, agency, and dignity and enhance their psycho-social well-being.

Various methods were utilized to research the spatial, social, economic, and phenomenological conditions of Oncupinar, Azraq, and Zaatari. Archival research, visual ethnography, interview analysis, and mapping exercises revealed that refugees want to be agents in their spaces, they are eager to work and support themselves, they feel in-dignified due to the lack of supportive dwellings, and they lack shaded recreational and communal spaces for adults. This negatively impacts the psychosocial well-being of refugees and the overall social fabric of the camps.

Providing communal spaces does not solve the issue of displacement or address the lack of adequate living spaces. There should be better planning and designing of refugee camps, improvement to shelters, infrastructure, and integration of refugees into the local economy is critical in increasing refugees' livelihood, agency, and dignity.

It is important to accept that refugees have more pressing needs, such as more supportive dwellings, better infrastructure, job opportunities, and integration into the local economy. However, these solutions require policy reform, funding, and support from the host community. With the average life span of camps being 17 years, this thesis aims to implement practical and cost-effective design interventions to enhance the camp's social fabric and foster a sense of agency to improve refugees' psychosocial well-being.

This study is valuable in understanding how to improve the design of humanitarian architecture. It is crucial to realize the importance of environmental context and how it can create a need for more shaded and insulated spaces. It is well understood that refugee camps are not the ideal solution to displacement. However, we need to face the reality of limited resources and restrictive policies and propose design interventions that consider long-term occupancy, which requires spaces other than 150 square feet of space.

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1.0 INTRODUCTION

This chapter will talk about the multifaceted issue of displacement. It will begin by defining displacement and exploring who displaced people are. Moreover, it will examine refugees' journey to find safety, from the initial decision to flee their homes to the challenges they face as they cross borders and navigate complex legal systems. Finally, it will elaborate on the specific focus of the thesis, which seeks to address the second phase of the resettlement process in a refugee camp.

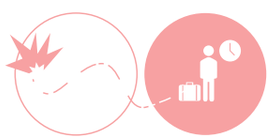
1.1 DISPLACEMENT

Displacement is a global issue that affects millions of people worldwide. It is defined as the forced movement of people from their homes due to various factors, such as war, persecution, human rights violations, and natural disasters (UNHCR). Displaced people can be **internally displaced (IDPs)** within their country or cross international borders becoming refugees seeking permanent resettlement in a third country. Some may also become **asylees**, crossing international borders to a country where they want to resettle permanently due to the fear of persecution. However, asylees do not obtain the status of **refugees**, resulting in fewer legal rights, figure [1.1].

How is the issue defined, and what are its dimensions? The issue of displacement is defined by the United Nations High Commissioner for Refugees (UNHCR), which reported that as of 2022, 103 million people had been forced to flee their homes. As seen in figure [1.2], 32.5% are refugees, and 22% live in planned camps and temporary settlements managed by the UNHCR and other governmental and humanitarian organizations. Despite their different legal statuses, displaced people share similar traumatic experiences, including losing their homes, livelihood, and social connections. They often lack access to basic needs and risk violence and exploitation. Additionally, they may struggle to access employment or educational opportunities, resulting in further economic and psychological deprivation.

Moreover, displaced people are often forced to flee to countries or communities with pre-existing economic and social challenges, exacerbating the social and political tension between refugees and host communities. Displacement is multi-faceted and incredibly complex, with humanitarian, economic, social, psychological, spatial, and legal implications. Addressing these issues requires a comprehensive approach that recognizes the various dimensions of displacement and the diverse needs of displaced people. Such an approach would need to involve policymakers, governments, humanitarian organizations, and local communities to ensure that the rights and needs of displaced people are fully met. While addressing the underlying structural causes of displacement is imperative, this thesis will explore architectural interventions that can mitigate some of the challenges refugees experience in camps.

REFUGEES
Refugees are people who have fled war, violence, conflict, or persecution and have crossed an international border to find safety in another country.



ASYLEES
Asylees are people who have applied for asylum in a country they want to resettle in permanently because returning to their country would lead to persecution; they do not obtain the status or legal rights of refugees.

IDP
Internally displaced people are persons or groups of persons who have been forced or obliged to flee within their country's borders due to or to avoid the effects of armed conflict.

Figure 1.1: Definitions, UNHCR, Co-Created with Mona Makki, 2022

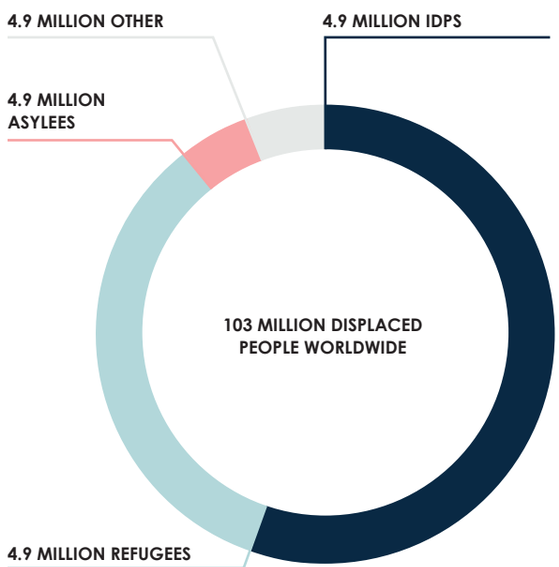


Figure 1.2: Displacement Breakdown, UNHCR, 2022

1.2 THE JOURNEY OF REFUGEES

The journey of displaced people, especially those seeking resettlement in a third country, is complex and challenging. It involves a series of phases that refugees must go through, each with unique difficulties and obstacles. In this thesis, we will explore the journey and experience of those who take the resettlement route and examine the four major phases refugees go through including displacement and registration, assistance and protection, assessment, and resettlement.

01 DISPLACEMENT AND REGISTRATION

The first phase, displacement, occurs when refugees flee their home country due to war, persecution, or other forms of violence. They attempt to cross borders and seek refuge in neighboring countries or territories managed by the UNHCR. During this phase, refugees undergo a registration process, where the UNHCR identifies their immediate needs for resettlement.

02 ASSISTANCE AND PROTECTION

The second phase, assistance and protection, involves providing refugees with basic needs such as shelter, water, food, health services, and education in refugee camps. Unfortunately, this phase can take up to 17 years on average, a prolonged and challenging process for refugees already displaced from their homes and families.

03 ASSESSMENT

The third phase, assessment, is a crucial stage in the resettlement process. Refugees are regularly interviewed to identify their resettlement needs and assess their eligibility for resettlement in a third country. This phase can be lengthy and frustrating as refugees wait for a third country to accept their application. This phase is concurrent with the assistance and protection phase.

04 RESETTLEMENT

The fourth and final phase, resettlement, occurs when a third country accepts the refugees and provides them with a new home. In the new country, refugees are supported by local organizations and volunteers who assist them in integrating into their new homes and communities.

The thesis aims to provide a comprehensive analysis of the journey of refugees and the spaces they occupy. By exploring the different facets of displacement, the thesis aims to contribute to the ongoing architectural discourse on displacement and provide policymakers and NGOs with strategies to address the challenges displaced people face. Ultimately, the thesis seeks to improve the lives of displaced people and support their efforts in building a more fulfilling life.

People go through a dangerous journey to reach a planned camp or country where they can register through the UNHCR. The UNHCR registers refugees to identify those in need of immediate resettlement.

01 DISPLACEMENT & REGISTRATION

UNHCR assesses refugee claims through individual interviews and identifies refugees for resettlement and approaches countries.

02 ASSISTANCE AND PROTECTION

The UNHCR provides shelter, water, food, health services, education in planned and managed camps.

03 ASSESSMENT

If referral is accepted, the refugee is resettled. Upon arrival in the resettlement country, service providers and volunteers help refugees integrate into their new home.

04 RESETTLEMENT

Figure 1.3: The Resettlement Journey, UNHCR, 2022

2.0 LITERATURE REVIEW

The chapter will provide a comprehensive analysis of displacement, beginning with a discussion of its history to provide context and highlight the gravity of the issue. The chapter will then examine proposed housing solutions to the displacement crisis since the 1900s and the birth and history of refugee camps, including their intended purpose throughout history.

An in-depth analysis of existing frameworks to address issues in refugee camps will also be discuss to understand the interdisciplinary research and proposals available. This will help to identify potential gaps and areas for improvement.

The chapter will conclude with the author's perspectives on the existing literature and steps moving forward.

2.1 HISTORY OF DISPLACEMENT

Displacement affects 1 in 77 people worldwide, which does not look promising. As seen in figure [2.1], the issue of displacement is an ongoing crisis that has been growing exponentially as climate change, violence, and protracted political conflicts, such as the ones in Afghanistan, Syria, and Ukraine, force people to flee their homes in the hopes of finding safer ones.

Although the number of displaced people has not always been 103 million, the crisis is not only a recent issue of concern. Displacement became a global crisis when World War I displaced millions of people. As seen in figure [2.2], before WWI, displaced people were not distinguished from migrants who chose to leave their homes to pursue better economic opportunities in other cities and countries. They could live in urban areas and work, resulting in a more prosperous life (Herscher et al.). In 1920, however, the "European governments introduced border passport requirements for security reasons, and to control the emigration of people with useful skills" (A Short history and origins of Passport, para. 10). The passport became highly controversial. It was considered dehumanizing, requiring a picture and physical description of people. Furthermore, immigration laws were passed, and quotas were created to limit how many people a country would admit to their country for resettlement.

"In 1943, United Nations Relief and Rehabilitation Administration (UNRRA) was founded to "plan, co-ordinate, administer… measures for the relief of victims of war in any area under the control of any of the United Nations through the provision of food, fuel,

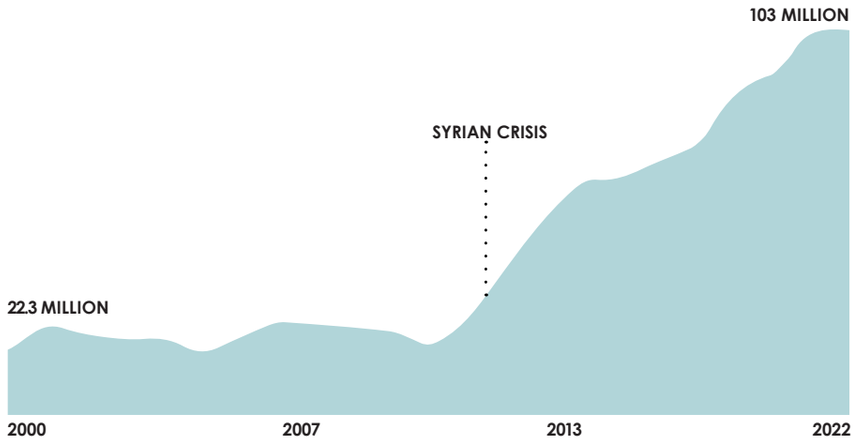


Figure 2.1: Displacement Trends, UNHCR, 2023

Refugees were not distinguished from migrants; therefore, had more freedom.
BEFORE WWI

World War I caused mass displacement.
1914-1918 WWI

The passport was created to limit the mobility of the displaced
1920 PASSPORT

More laws were passed and quotas were created to limit how many people a country would admit for resettlement.
IMMIGRATION LAWS

World War II produced 40-65 million displaced people: UNRRA repatriated many back to their country.
1939-1945 WWII

When millions could not return, therefore the UN developed the UNHCR to overlook and mitigate the crisis.
1950 UNHCR

Figure 2.2: History of Displacement, Displacements Architecture, 2022

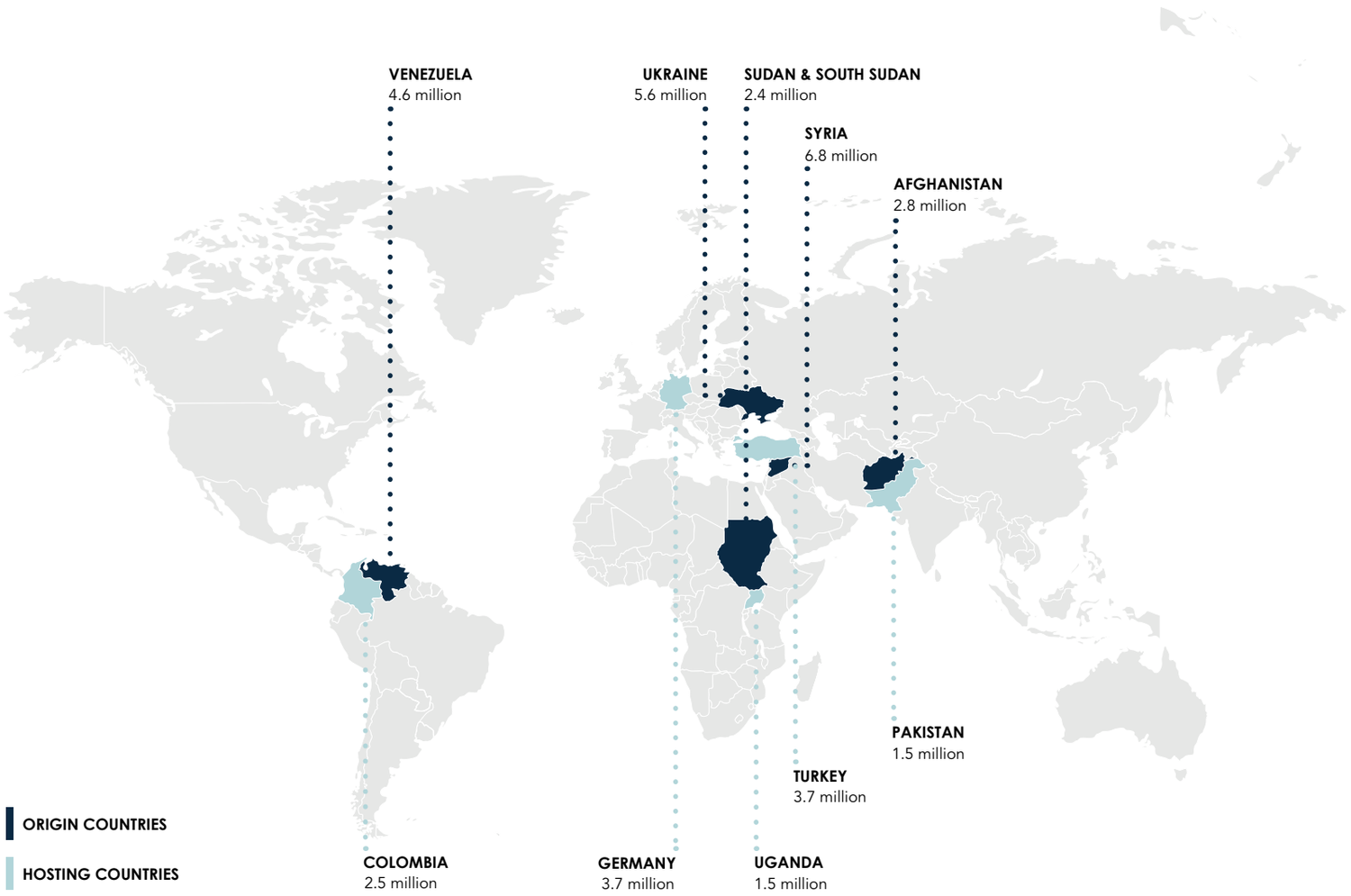


Figure 2.3: Top Five Refugee Producing Countries, UNHCR, 2022

clothing, shelter, and other basic necessities" (UNHCR). When World War II produced 40-65 million displaced people, the UNRRA repatriated many of them (What happened to people displaced by the Second World War?). When millions more could not be repatriated or accommodated, the United Nations High Commissioner for Refugees was "tasked, among others, promoting international instruments for the protection of refugees, and supervising their (resettlement) application" (Office of the UNHCR 4).

As outlined above, mass displacement has been ongoing for decades and has affected millions globally. As seen in Figure [2.3], however, in recent years, 72% of displaced people have originated from the following five countries: Syria, Ukraine, Venezuela, South Sudan, and Afghanistan. Individuals forced to flee from these areas seek refuge in their neighboring countries: Turkey, Germany, Columbia, Uganda, and Pakistan. The ongoing conflict in Syria resulted in 580,000 deaths and displaced 6.8 million people resulting in one of the worst refugee crises of the 21st century (UNHCR). The scale of this crisis calls for more sustainable and dignified solutions.

2.2 HISTORY OF REFUGEE CAMPS

How have displaced people been accommodated throughout history? Hannah Arndt, a philosopher and Holocaust survivor, discusses how refugees and detainees have not been distinguished. Andrew Herscher argues that camps are associated with "assistance and regression." Refugee camps and concentration camps became a major part of architectural discourse after the Holocaust; however, they did not exist without precedent (Herscher et al.). Various historical events and catastrophes led to the development of the camps' architecture genealogy. Furthermore, Herscher developed an ideological understanding of the current responses to the refugee crisis. He argues that if a nation sees refugees as able to contribute to the workforce, then the architecture is oriented toward the cities. If countries envision refugees as citizens, the architecture is oriented toward housing. Finally, if they are neither envisioned as citizens nor workers, the solutions are designed around camps. Unfortunately, many host countries are poor and do not have the financial ability to assist refugees; therefore, they resort to refugee camps and the United Nation's assistance.

Displacement is a complex and multi-dimensional issue that has provoked politicians, anthropologists, architects, researchers, and even physicians. In his book Displacements Architecture and Refugee, Andrew Herscher discusses the history of displacement, the solution, and how it became part of architectural discourse. Before the establishment of the UNHCR in 1951, the government tasked architects with accommodating refugees during and after WWI, so when Germany was demilitarized in 1919, architect Ernst May utilized barracks, hospitals, and armament factories for housing refugees (Herscher et al.). This was then standardized, and mass-produced solutions came to life. Prior to that, when Germany invaded Belgium in 1914, Le Corbusier designed the Maison Dom-ino to be mass-produced in Belgium when Belgians returned to a ruined country. The concept utilized an open, flexible design to allow potential residents to reconfigure it (Herscher et al.).

As mentioned, the UNHCR supported displaced people who could not return to their countries after WWII. Since then, UNHCR has been the primary supporter of refugees. The organization attempts to settle refugees in urban areas or repatriate them back to their countries, as they do not consider camps the first or best solution. Host countries, however, tend to push for refugee camps to reduce tension between refugees and host communities and reduce risk. As a result, many planned camps have been established to support, manage, and contain refugees. The organization utilizes a standardized modular plan and camp design. It is understood that the nature of emergencies requires the utilization of modular and standardized planning and designing strategies; however, the strategies that the UNHCR utilizes have not changed or evolved throughout the years.

The organization emphasizes site selection and proper shelter that provides security, dignity, and a sense of home. The conditions and locations of the temporary settlements, however, do not support the organization's mission (Chamma). With camps in desolate areas designed on a grid and sometimes lacking basic infrastructure, the refugees are

Le Corbusier's Maison Dom-ino, designed a little after Germany invaded Belgium with the aim of reconfigurability and user agency.
1914 WWI

Ernst May utilized barracks, hospitals, and armament factories for housing displaced people after World War I.
1918 POST WWI

Shigeru Ban's emergency shelter utilizes paper tubes for an easy and efficient housing strategy.
1994

Many solutions are being proposed including rapid shelters, transitional shelter, and prefabricated.
2010-NOW

Figure 2.4: Refugee Architecture Since WWI, Herscher and Meinhold, 2022

deprived of livelihood opportunities, agency, and dignity. The current conditions do not allow refugees to personalize their spaces, work, or move freely, making refugee camps and humanitarian spaces "waiting rooms in the margins of the world" designed for the most "unwanted and undesirable" (Ban et al. 68).

The Syrian crisis has produced 6.8 million displaced people. This has greatly provoked researchers, architects, and planners like Ayham Dalal and Nasr Chamma to further analyze displacement, the camps where refugees live, the standards for planning and designing these temporary spaces, and alternate sustainable solutions (Chamma). While Syrian refugees have fled to over 130 countries, Turkey, Jordan, and Lebanon are some of the major hosting countries of Syrian refugees. As seen in figure [2.5], Turkey hosts 3.6 million, Lebanon hosts 831,000, Jordan 765,000, Iraq 260,000, and Egypt 141,300.

Various camps have been opened because of the crisis. The primary camps are Zaatari and Azraq in Jordan and Oncupinar in Turkey. Due to its magnitude and scale, the humanitarian response has been among the most well-researched and funded in recent years.

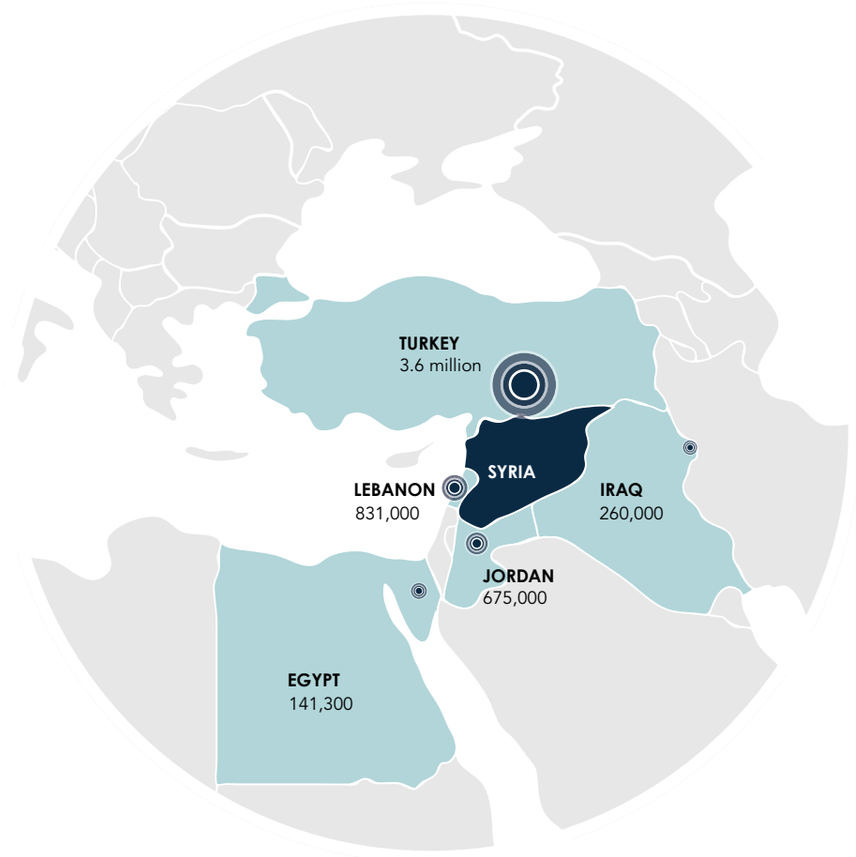


Figure 2.5: Top Countries Hosting Syrian Refugees, UNHCR, 2022

2.3 METROPOLITAN SOLUTIONS

While there has been extensive research and proposals to improve the conditions in refugee camps, this study references Sustainable Design Principles for Refugee Camps, a guideline developed based on interdisciplinary research by the Delft University of Technology, the Massachusetts Institute of Technology, and Wageningen University Research. The researchers argue that "Refugee camps appear to be, in fact, emerging urban environments, of which the aimed-at temporary status often prolongs into a long-term settlement – with populations often equaling regular cities, ranging from 25,000 to even more than 100,000 persons" (Rooij et al. 3). The study acknowledges the life span of refugee camps, compares the stressors of refugee camps to emerging cities, and proposes using Metropolitan Solutions to address the concerns in a camp and increase livability. Food security, access to water, and heat stress are among the most urgent concerns in camps. These issues are also prevalent in cities, and the framework known as Metropolitan Solutions has been developed to address them. Metropolitan Solutions encompasses six key areas: climate, food production, health, green cities, water and sanitation, waste management, and social-political education, as seen in figure [2.6]. Given the similarities in the challenges faced by camps and cities, adopting Metropolitan Solutions can effectively enhance the environmental impact and quality of life in camps (Rooij et al.).

As in any other urban setting, implementing sustainable design principles within the refugee camp can promote economic development by generating income, employment opportunities, and locally sourced food without excessively depleting natural resources within and around the camp vicinity. Metropolitan Solutions has the potential to provide various resources, such as design, planning, evaluation tools, and guidelines to effectively integrate various aspects of urban greenery within refugee camps (Rooij et al. 3). In terms of feasibility, the framework requires an interdisciplinary approach to mitigating issues in a camp setting; however, this is often costly and requires the collaboration of many stakeholders, which is challenging to execute.

Moreover, the study recognizes that refugees experience inadequate living conditions and endure isolation, limited access to open green spaces for recreation and nature, lack of meaningful occupation and social interactions, and feelings of dependence on external assistance. Therefore, the study suggests using Maslow's Hierarchy of needs as a measuring tool to ensure the development of healthy communities that address the physical needs of residents and the psycho-social needs. The researchers state, "The challenge of creating a healthy community does not end with physical needs; rather, it is only complete when the whole pyramid has been addressed" (Rooij et al. 3).

Figure 2.6: Metropolitan Solutions Framework, Sustainable Design Principles for Refugee Camps, 2022

2.4 PERSPECTIVE

The UNHCR prioritizes repatriation, integration, and resettlement, but emergency relief needs often result in camps opening, which unfortunately remain open for decades, as discussed in the previous chapter. Therefore, acknowledging the reality that camps and informal settlements will become increasingly common is crucial. It is essential to consider feasible and incremental approaches to improving living conditions and increasing livelihood opportunities and dignity in these spaces. The UNHCR's goal is to ensure that refugees can access adequate living conditions, including shelter, water, health services, education, and social services. However, the urgency of accommodating people in emergencies hinders the planning and design of camps, creating a gap between the mission and the implementation.

Additionally, the lack of initial planning for conflicts limits the proper implementation of UNHCR guidelines. While it is valuable to evaluate camps through an urban lens and propose "resource-efficient, climate-proof, socially inclusive, resilient, and self-regenerative solutions," limited funding, policy reform, and interdisciplinary collaboration make the implementation of such frameworks difficult (Rooij et al. 3). Thus, it is crucial to identify concerns and propose feasible solutions that refugees or potential investors can more easily implement. Consequently, Zaatari, Azraq, and Oncupinar refugee camps will serve as case studies to understand these spaces' spatial, social, economic, and phenomenological aspects from an intersubjective perspective to identify specific concerns that can be addressed.

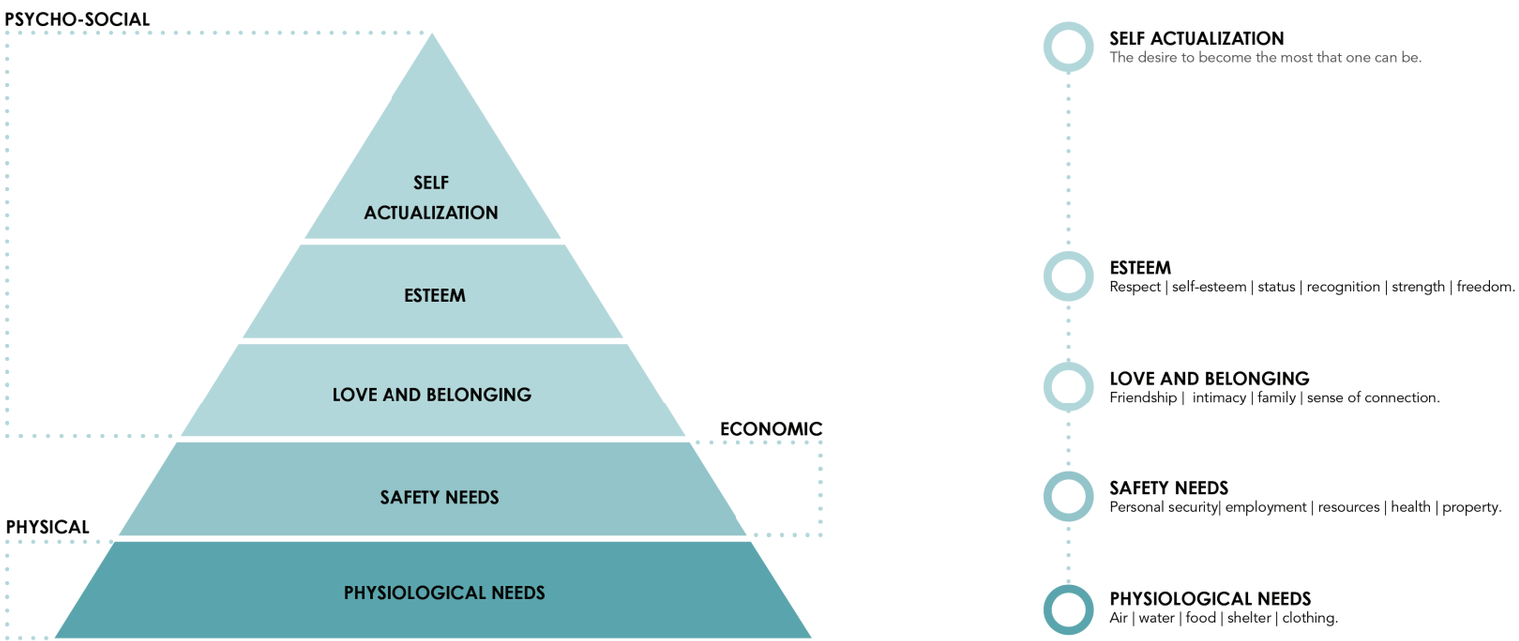


Figure 2.7: Abraham Maslow's Hierarchy of Needs, Sustainable Design Principles for Refugee Camps, 2022

3.0 SCOPE

This chapter will provide an overview of the research's scope and the underlying concepts that frame the investigation. It will also provide a detailed explanation of the framework within which the research is being conducted, i.e., intersubjective, post-positivist, etc., as well as the methods and limitations of the study. Additionally, it will describe the research process and the steps taken to gather and analyze data. By presenting this information, readers will holistically understand the research's purpose, approach, and methodology.

PRIMARY FRAMEWORK:
Inter-subjective / Contextual

SECONDARY FRAMEWORK:
Post Positivist

ASSUMPTIONS	FRAMING CONCEPTS	QUESTIONS	SPECIFIC CONSTRUCT	METHODS/TACTICS	IMPLICATIONS
The spaces refugees occupy and lack of livelihood opportunities and power render an in-dignifying life	Future Refugee Camps As Integrated Sustainable Settlements, Nasr Chamma **DIGNITY:** the right of a person to be valued and treated ethically	What are the characteristics of dignified living spaces?	Context Specific Flexible Open Shaded Thermally comfortable Culturally sensitive	Visual Ethnography: to analyze the living conditions Interviews: to understand refugees perspective on dignity	Designing spaces that foster a sense of self worth and dignity
Refugees lack the spaces that promote psycho-social well-being	Future Refugee Camps As Integrated Sustainable Settlements, Nasr Chamma **PSYCHO-SOCIAL WELL-BEING:** "incorporates the physical, economic, social, mental, emotional, cultural, and spiritual determinants of health" (Kumar)	What spaces, programs, and design elements support psycho-social well-being?	Commercial / business spaces Learning & Innovation spaces Flexible / multi-purpose spaces Recreational spaces Supportive dwellings Proper Infrastructure Community engagement Ownership over spaces Freedom of movement	Mapping: to identify business, recreational, learning spaces Visual Ethnography: to analyze infrastructure & dwelling conditions Interviews: to understand refugees perspective on level of freedom	Providing the necessary support systems and spaces to enhance psycho-social well-being
Refugee do not have decision making power over their spaces	From Shelters to Dwellings, Ayham Dalal **AGENCY:** a sense of control over ones' actions and their consequences - Oxford	How to design interventions that foster agency.	Flexible / multi-purpose spaces Community engagement Ownership over spaces	Mapping: to identify flexible / multi-purpose spaces Archival research: to identify space ownership and community engagement	Allowing refugees the power to personalize their spaces and lead in their communities
Refugees lack the spaces, policies, and freedom to support themselves	Future Refugee Camps As Integrated Sustainable Settlements, Nasr Chamma **LIVELIHOOD**: a means of securing the necessities of life - Oxford	What elements and spaces contribute to a person's livelihood?	Commercial / business spaces Learning & Innovation spaces Recreational spaces Supportive dwellings Proper Infrastructure	Mapping: to identify business, recreational, learning spaces Visual Ethnography: to analyze infrastructure & dwelling conditions	Developing measures and frameworks that increase refugees' livelihood and promote self sufficiency

Figure 3.1: Framing Concepts Diagram

3.1 FRAMING CONCEPTS

This thesis is framed around the concepts of livelihood, agency, dignity, and psycho-social well-being. Understanding refugee camps through these concepts is important to identify architectural interventions that could improve refugees living conditions and give them a more meaningful and fulfilled life. Furthermore, investigating the presence of these concepts in conjunction with Maslow's Hierarchy of needs in refugee camps will clarify where refugee camp design is lacking.

Exploring the four concepts through an intersubjective and post-positivist lens can help us holistically analyze camps qualitatively and quantitatively. This can then help us identify design interventions to incrementally improve the spatial and social conditions in refugee camps. These concepts have been identified through and informed by the literature review and preliminary studies.

LIVELIHOOD

According to the Oxford Dictionary, livelihood refers to the means of securing the necessities of life (Oxford). However, in the context of camps, the concept of livelihood is much more complex and multifaceted. Several crucial elements are required to ensure that individuals have the means to secure their necessities of life, including employment, education, food security, supportive dwellings, proper infrastructure, recreational and green spaces, innovation opportunities, and social cohesion and bonds.

Nasr Chamma, a former Ph.D. student from Spain, conducted research involving interviews and fieldwork in three refugee camps: Zaatari, Azraq, and Oncupinar. The refugees in these camps were asked various questions regarding their plans for the future, camp conditions, financial situations, and feelings about camp services. Most refugees expressed a lack of livelihood opportunities in the camps, primarily regarding employment. Heba, a refugee in Oncupinar, told Chamma, "We don't care about the services in the camp; what we need is livelihoods and job opportunities" (Chamma 100), which indicates the scarcity of livelihood opportunities in the camps. The primary design question the research will explore is what elements and spaces contribute to a person's livelihood?

AGENCY

Agency refers to an individual's ability to take control of their actions and the outcomes that follow (Oxford). Some key indicators of agency include self-sufficiency, freedom of movement, and the ability to personalize and manage one's surroundings. Unfortunately, refugees often find themselves at the mercy of international organizations and NGOs, with little opportunity to influence how they are housed and supported. In many cases, refugee camps are located in remote and isolated areas, far from towns and cities, and often surrounded by military bases, as noted by Young, who observed that "It doesn't help that the camp is in a desert, miles away from the nearest town, along a highway dotted with…military bases" (Young).

While factors such as location and security can affect the level of agency that refugees feel, the design, planning, and organization of camps also play a crucial role. The United Nations High Commissioner for Refugees (UNHCR) guidelines are utilized to plan, design, and construct refugee camps, with little involvement from refugees. As a result, refugees often feel disempowered and frustrated, as they cannot "add, change, or improve anything" in their surroundings (Chamma 104). This encourages us to explore the question: how to design interventions that foster agency in a camp context?

DIGNITY

Dignity is a fundamental right of every human being and refers to a person's entitlement to respect and ethical treatment. There are various factors that contribute to an individual's sense of dignity, including access to appropriate infrastructure, supportive housing, and recreational spaces. According to Andrew Herscher, an associate professor at the University of Michigan, the response to the refugee crisis varies depending on how a nation perceives refugees. If refugees are considered capable of contributing to the workforce, solutions are oriented toward cities. If refugees are viewed as citizens, then solutions are oriented toward housing. Finally, if they are neither perceived as citizens nor workers, solutions are designed around camps (Herscher et al.).

Although Herscher's framework does not overtly address the lack of dignity associated with refugee camps, it is evident that the camps are established due to how refugees are perceived as neither citizens nor workers. This concept is supported by the philosopher and Holocaust survivor Hannah Arndt, who argues that refugees and detainees are not distinguished. This raises the question of how to respond to the refugee crisis in a more dignified manner and what characteristics define dignified living spaces, especially in terms of spatial design.

PSYCHO-SOCIAL WELL-BEING

Psycho-social well-being is a comprehensive concept encompassing various health aspects, such as physical, economic, social, mental, emotional, cultural, and spiritual determinants (Kumar). In refugee camps, it is crucial to consider the multiple factors contributing to psycho-social well-being. The lack of these elements can adversely affect the well-being of already suffering refugees.

For instance, healthcare is a vital component of psycho-social well-being. Refugees need access to healthcare facilities and services catering to their medical needs. In addition, providing proper infrastructure, such as housing, water and sanitation facilities, and electricity, is necessary for maintaining good physical health. Recreational spaces are equally important as they provide a place for refugees to unwind and engage in physical activities. This is particularly important in camps where refugees may experience isolation and lack purposeful occupation. Social cohesion and bonds also play a critical role in psycho-social well-being. Refugees need to feel a sense of belonging and community in their new surroundings.

As highlighted by Rooij et al., refugees living in camps often suffer from a lack of open spaces that provide access to nature and recreational values. They may also experience

a sense of dependency on external support, which can hinder their ability to become self-reliant. Therefore, understanding the spaces, programs, and design elements contributing to psycho-social well-being is crucial to propose a more holistic and dignified living environment for refugees.

RESEARCH QUESTIONS

The primary questions as discussed and shown in figure [3.1] are concerned with potential frameworks and design proposals to make refugee camps more livable and sustainable. The questions addressed include:

1. What are the characteristics of dignified living spaces?
2. What spaces, programs, and design elements support psycho-social well-being?
3. How can design interventions foster agency in Zaatari?
4. What elements and spaces contribute to a person's livelihood?

3.2 METHODS AND LIMITATIONS

This research is limited to the use of other researchers' fieldwork, interviews, and analysis. It utilizes an etic approach where research is conducted away from the site. Furthermore, it is limited to three refugee camps: Zaatari and Azraq in Jordan, and Oncupinar in Turkey. The following sections will provide more details on the research methods employed to analyze these camps.

Qualitative and quantitative research methods were employed to comprehensively understand the spatial, social, and economic conditions in Oncupinar, Azraq, and Zaatari refugee camps. These methods included info-graphics, mapping, visual ethnography, digital modeling, physical modeling, and interviews. By utilizing these techniques, the layout and infrastructure of the camps, programs, living conditions, and refugee concerns were carefully analyzed.

The analysis of the data collected through these methods provided valuable insights into the elements that contributed to the refugees' livelihood, their experiences of agency, and the elements that hindered their dignity and psycho-social well-being.

Various primary and secondary sources were referenced to gather information and be further analyzed. Nasr Chamma, a former Ph.D. student from Spain, researched refugee camps, focusing on finding alternatives to the camp setting. Chamma's fieldwork in Oncupinar, Azraq, and Zaatari provided valuable insights into these camps' spatial, social, economic, and phenomenological aspects.

Additionally, the UNHCR, an international organization that provides support for displaced people, maintains an extensive database containing maps, interviews, and reports on refugee settlements. As the primary manager and supporter of these spaces, the UNHCR's reports were an essential source of information.

Moreover, due to the Syrian refugee crisis being one of the most well-researched and funded crises, various online articles, peer-reviewed articles, movies, and reports on the topic were leveraged. The information gathered from these sources helped to investigate the topic more comprehensively.

The initial aim of this research was to adopt a humanistic approach, utilizing Maslow's Hierarchy of Needs as a framework to understand the areas where refugee camps were lacking. With Syrian refugees as the focus group, three camps that were established as a result of the Syrian crisis were selected for preliminary research. The research was conducted at various scales, including macro, meso, and micro, requiring multiple maps and diagrams to identify and compare the camps' locations, layouts, and infrastructure.

To understand the relationship between density and programs, maps were utilized. Furthermore, to analyze the economic and social aspects of the camps, maps were created to identify the number and location of recreational and business spaces. On the meso scale, images were analyzed to understand how people utilized and modified interstitial or vacant spaces. Finally, images and digital models of the shelters were developed to compare the square footage, lighting, privacy, amenities, and stability of the shelters.

The next chapter of the research report will provide a detailed illustration and reflection on the preliminary studies conducted in the three camps.

4.0 PRELIMINARY STUDIES

Three Syrian refugee camps: Oncupinar in Turkey, Azraq, and Zaatari in Jordan were identified to study the camps' spatial, social, and economic conditions, as well as the lived experiences of the residents. The objective is to reflect on how adequately they fulfill the residents' physiological and psycho-social needs in reference to Maslow's Hierarchy of Needs. Moreover, the study aimed to assess the presence and degree of livelihood, agency, dignity, and psycho-social well-being in the camps.

4.1 ONCUPINAR

Oncupinar is a refugee camp located in the Southeastern region of Turkey near the Syrian-Turkish border seen in figure [4.1]. The camp was opened in 2012 by the Turkish government to accommodate refugees fleeing the ongoing conflict in Syria. The Turkish Disaster and Emergency Management Department manage the camp. When Syrian refugees crossed the border to Turkey in 2011 to seek refuge, the Turkish government set up an emergency tent camp within 24 hours (McClelland). The country was managing 22 camps that served over 200,000 refugees. In 2012 Oncupinar container camp opened to provide better living conditions for Syrian refugees. The camp was designed using UNHCR and Sphere standards; however, it is not managed by the UNHCR. It is critical to note that Turkey receives funding from the United Nations to contain Syrian refugees within Turkey to prevent them from seeking refuge in European nations (Terry).

While journalist McClelland says the number of residents is 14,000, Nasr Chamma was told a different number of 4,000 by an anonymous resident at the camp. When Chamma wanted to visit the camp, he was not allowed to, and the leadership never responded to his attempts. However, a member of the management department agreed to speak with him if his identity remained anonymous. While McClelland has a utopian view of the camp, the doctoral thesis candidate has a more dystopian one. Four people agreed to speak with Chamma, who was told that the Turkish government had warned refugees not to speak with outsiders or share details about the camp. These render the camp to be more like a prison rather than a safe haven.

SPATIAL CONDITIONS

Location: as mentioned previously, the camp is in Kilis province near the Syrian-Turkish border. It is approximately 20 km from the city of Gaziantep. Size: the camp covers about 1 square km of area and can potentially house 23,000 residents. Layout and infrastructure: because the camp is a formally planned camp, it has highly developed infrastructure and a rigid layout. The main roads and spaces between shelters are brick paths with streetlights and underground electrical and water systems. Centralized water and electricity provide residents with basic needs, making the camp superior to other refugee camps. The camp also has fire hydrants, a maintenance team, and street-washing trucks. The overall spatial perception makes the camp more of a permanent place (Chamma).

Figure 4.1: Location of Oncupinar, Google Earth, 2023

Figure 4.2: Areal Image of Oncupinar, Google Earth, 2023

Programs and amenities: as seen in figure [4.5], there are various programs and amenities in the camp, including:

- Shelters: the camp consists of 2,053 shelters that are placed in rows and ranged in a grid-like system. The shelter units are approximately 24 square meters and are intended to hold up to 6 people. The units have access to electricity, water, and heat. The residents, however, cannot personalize the space, add appliances, or make any changes.
- Clinics: two clinics in the camp are situated in a central location for easy access. The clinics are intended for basic services, including check-ups and treatment for minor illnesses.
- Schools: the camp has two schools that are run by the Turkish Ministry of Education and follow the Turkish curriculum.
- Mosques: there are two mosques where residents go for religious needs and services and act as spaces for congregations.
- Playgrounds: the two main playgrounds are primarily designed for children to play and socialize. This is a great amenity for children's psychosocial needs.
- Government-managed markets: there are government-managed markets in the camp where residents can shop for necessities such as food and hygiene products.
- Distribution centers: the residents can utilize the distribution centers for food, clothing, and other supplies.
- Security: the camp is near a military base, with a barbed gate and limited mobility; refugees must enter through metal detectors and X-ray machines, making it a highly safe and secure space.
- Community centers: there are several community centers in the camp designed primarily for children and youth.

Materiality: the camp utilizes a few materials for the buildings based on their typology – shelters and schools are constructed from containers, while the mosques and administration facilities are made of concrete. Program layout: figure [4.5] shows that the programs are dispersed evenly, ensuring all residents can access amenities. However, we also see that the northeast section of the camp is mostly vacant. The vacancy indicated that residents are starting to leave the camp, which begs the question: Do they feel fulfilled? Do they feel a sense of agency or dignity?

Shelters: the shelters were closely studied to further analyze the spatial conditions. As

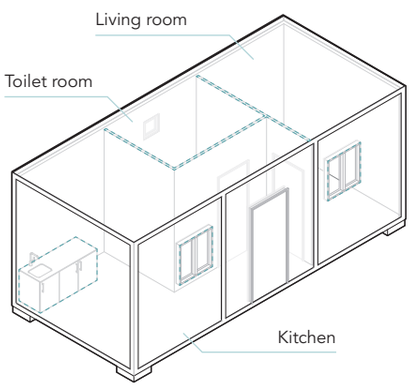


Figure 4.3: Oncupinar's Shelter Design, 2023

Figure 4.4: Oncupinar's Businesses and Playgrounds, Google Earth, 2023

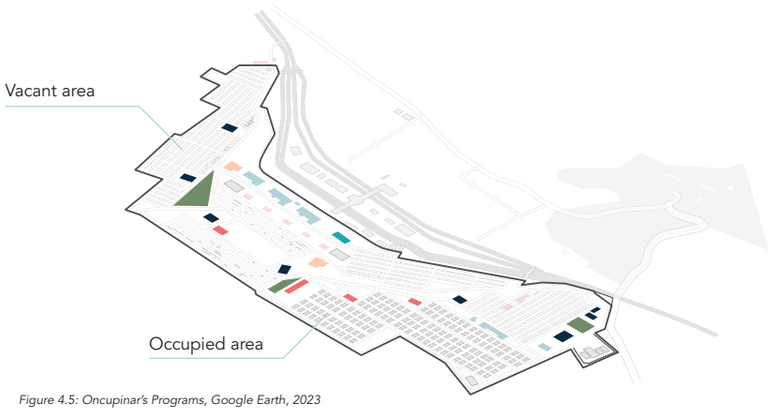


Figure 4.5: Oncupinar's Programs, Google Earth, 2023

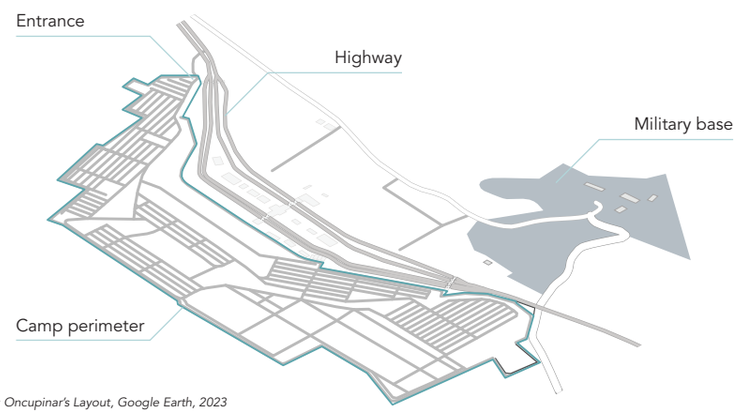


Figure 4.6: Oncupinar's Layout, Google Earth, 2023

seen in figure [4.3], the shelters are 24 square meters and comprise three rooms with a living room, kitchen, a private toilet room, and a lockable door for security and privacy. These units are not meant to hold more than six people at a time; however, there are instances where 12 people stay in one container. The management does not allow residents to install appliances in their units to reduce electricity and water demands (Chamma). Furthermore, when images of the units are analyzed, as shown in figure [4.7], the units lack shading elements, which hinders residents from spending time outside the units. The images also illustrate residents attempting to create more private spaces using tarps between the units. The spatial conditions, both on the macro and micro scale, render the camp a containment facility rather than a space where people can thrive with dignity and agency over their lives and spaces.

SOCIAL AND ECONOMIC CONDITIONS

The camp used to have a bazaar-like souk; however, that was suddenly closed by the government and replaced by Turkish-led markets (Chamma). The camp has limited job opportunities- some families work in agriculture outside the camp for limited salaries. Although water, electricity, healthcare, and education are free at the camp, the refugees want to work more than anything (Chamma). The United Nations pays Turkey to give refugees monthly vouchers; however, as mentioned previously, Turkey must comply with a condition that is blocking refugees from migrating to Europe. Many refugees feel powerless and bored to the point that relationships have deteriorated, with many people not speaking to one another (Chamma). As seen in figure [4.4], there are minimal recreational spaces and zero refugee-owned businesses at Oncupinar. There is minimal room for economic agency at the camp. The refugees feel frustrated with the lack of power to personalize their spaces and the stagnant lifestyle at the camp.

LIVED EXPERIENCES

When analyzing the spatial, social, and economic conditions at the micro and macro scale, Oncupinar is isolated from an urban environment. Although the camp has great services and developed infrastructure, it is uninviting with security check points and barbed gates. Residents feel disempowered over their spaces and crammed in their units. The camp feels more like a prison because of the regimented lifestyle, lack of recreational spaces, freedom, control over their environ-

"FUNDAMENTAL FACTORS OF LIVELIHOOD OPPORTUNITIES, COMMUNITY, AND ACTIVE SOCIAL PARTICIPATION ARE STILL MISSING"

(Chamma)

Figure 4.7: The Interstitial Spaces in Oncupinar, REUTERS/Osman Orsal, 2012

Figure 4.8: Inside the Container, REUTERS/Osman Orsal, 2012

Figure 4.9: Oncupinar Markets, REUTERS/Osman Orsal, 2012

Figure 4.10: Oncupinar, REUTERS/Osman Orsal, 2012

Figure 4.11: Oncupinar Entrance, REUTERS/Osman Orsal, 2012

ment, and lack of livelihood opportunities. Chamma notes that residents claimed, no one wants to live here (Chamma). Furthermore, he states that "fundamental factors of livelihood opportunities, community, and active social participation are still missing" in Oncupinar (Chamma).

REFLECTION

When reflecting on the comprehensive analysis of Oncupinar, it is apparent that the camp satisfies the residents' physiological needs, including housing, food, water, etc. It also satisfies some of the safety needs, such as health care. However, the camp is lacking when considering livelihood elements such as employment, supportive dwellings, and recreational areas. The highly secure, restricted, crammed, and regimented camp hinders refugees' sense of agency and dignity. There are opportunities for improvement on the macro and micro scales.

On the macro-scale, the camp can benefit from three major initiatives.

1. Developing a souk or commercial corridor to provide the residents with economic opportunities to increase livelihood and create a self-sustaining support model.
2. The second initiative the residents can benefit from is the implementation of greenery and recreational areas to improve the residents' psycho-social well-being and the camp's overall social fabric.
3. Finally, the camp's perimeter can be redesigned to be welcoming and dignifying to reduce the prison-like ambiance caused by the barbed gate.

On the micro-scale, various initiatives can create more adequate living conditions. These initiatives include:

1. Increasing dwelling sizes to enhance residents' experiences within their dwellings and provide privacy for everyone.
2. Designing transitional shelters to support organic family growth allows families to live together, similar to how they lived in their previous environment. This has the potential to improve residents' psycho-social well-being and allow their support systems to be close to them.
3. Increasing privacy in interstitial spaces will also provide safe and enclosed spaces for women and children, which they lack right now.
4. Develop water recycling methods to support irrigation and increase greenery in the camp, which is highly lacking. This initiative has the potential to improve the overall spatial conditions, provide shading, and improve the air quality in the camp.

These can create a healthier living environment, and supportive dwellings, increase agency over spaces, and enhance the psycho-social well-being of residents.

Figure 4.12: Inside the Container in Oncupinar, REUTERS/Osman Orsal, 2012

Figure 4.13: A Broken Window, REUTERS/Osman Orsal, 2012

Figure 4.14: A Refugee Selling Goods, REUTERS/Osman Orsal, 2012

Figure 4.15: Supermarket, REUTERS/Osman Orsal, 2012

Figure 4.16: A Makeshift Cafe and Bird Store, REUTERS/Osman Orsal, 2012

4.2 AZRAQ

Azraq refugee camp in Azraq, Jordan, opened in 2014 in response to the growing number of refugees fleeing Syria and to overcome problems experienced at the Zaatari refugee camp. Azraq camp is 20 km west of Azraq Village and 90 km from the Jordan-Syria border seen in figure [4.17]. The Jordanian government built the camp in partnership with the UNHCR and other humanitarian organizations. The management is now co-coordinated by the Syrian Refugee Affairs Directors (SRAD) and the UNHCR. It was designed and managed based on lessons learned from Zaatari. The camp was designed at a scale to support 50,000 to 130,000 residents; however, the remote location posed some issues, such as access to food, electricity, and other amenities, causing the population to be only 39,322. The camp is also highly decentralized.

SPATIAL CONDITIONS

Location: the camp, like Oncupinar, is in an isolated area extremely far from an urban epicenter. Size: the camp covers an area of approximately 15.4 square kilometers and can house up to 130,000 people. The camp is vast and much larger than Oncupinar. Layout and infrastructure: like Oncupinar, Azraq is also considered a planned camp because it was established after the emergency phase of the Syrian crisis. As a result, the camp is more developed than many other refugee camps and has a semi-developed infrastructure and layout. The camp is divided into seven villages, five of which are currently used. Each village contains multiple blocks of shelters and their amenities. The main ring roads and streets are made from asphalt with some drainage networks and streetlights. However, the space between the neighbors is sand which can turn to mud when it rains and snows; this can negatively affect the social fabric of the camp. There are boreholes in the camp to ensure the quantity and quality of water (Chamma). Sewage is transported off-site. A solar plant provides electricity to the shelters for about 16 hours a day. However, because the camp is so isolated from an urban area, resources are limited, making it challenging for refugees to thrive.

Programs and amenities: as seen in figure [4.21], there are various programs and amenities in the camp, including:

> Shelters: as mentioned previously, the camp comprises five occupied villages, each with multiple blocks of shelters and services. There are 9,000 shelters currently in use. The units are a basic 24m^2

Figure 4.17: Location of Azraq, Google Earth, 2023

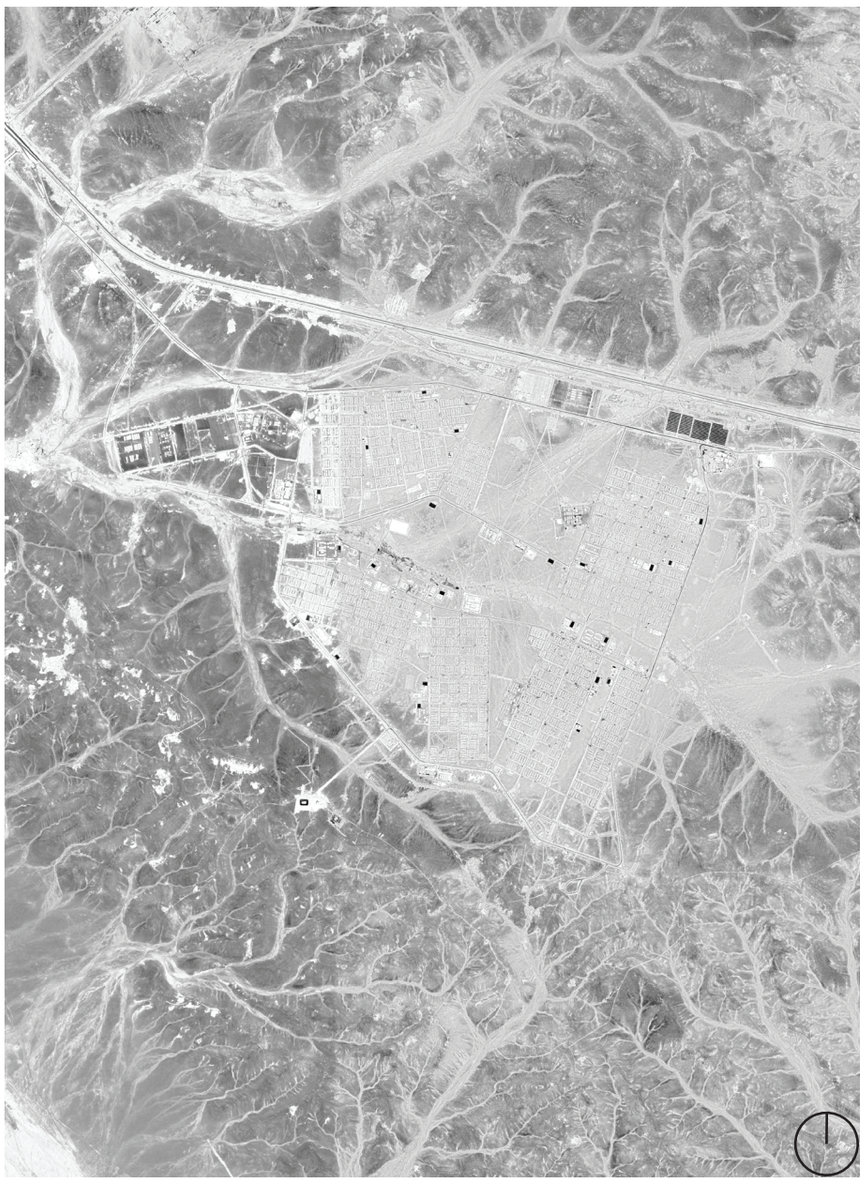


Figure 4.18: Areal Image of Azraq, Google Earth, 2023

single room with a door and window. The space is not divided, nor do the refugees have the right to modify the space. As of 2021, "[a]ll the shelters in Azraq have been upgraded with a kitchen extension, increasing the shelter space to 32m²" (UNHCR). Although the residents are attempting to have a normal life, Mohammad, who was one of the first to arrive in the camp, says, "[i]t's very hard to have a normal life here" (Young).

- Clinics: there are three clinics and a hospital in the camp that provides a range of services, including "acute and chronic health consultations, reproductive health, vaccination, mental health, dental health, nutrition, and pediatric services." Advanced services are also available in the hospital, including laboratory tests, X-ray imaging, an emergency department, delivery and pediatric admissions, and general surgeries (UNHCR).
- Schools: the camp has six formal schools that are supported by the United Nations International Children's Emergency Fund (UNICEF) and the Ministry of Education (MoE). There are also informal schools and kindergarten facilities to provide education for children.
- Mosques: there are mosques where residents go for religious needs and services and act as spaces for congregations.
- Playgrounds and community centers: many playgrounds, soccer fields, and community spaces are designed for children to play and socialize. This is a great amenity for children's psychosocial needs.
- Jordanian and Syrian-owned markets: the host community and the refugees own 375 shops in the market area. The shops include food shops, restaurants, accessories, bikes, etc. While there are many shops, they are half km from the residents, making it challenging to walk with groceries.
- Distribution center: because the refugees receive food vouchers, they buy fresh products from the markets; however, there are bread distribution centers in the camp.
- Security: the camp is in a desert near a highway "dotted with Jordanian military bases" (Young). It has barbed fences making it highly secure.
- Solar plant: the solar plant, which IKEA funded, provides energy to the units for 16 hours a day.

Materiality: the camp utilizes corrugated galvanized iron (CGI) sheets for the units, and CGI prefabricated modular units for

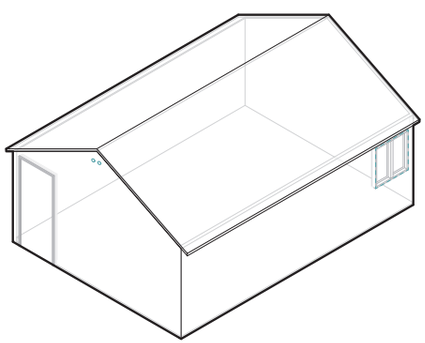


Figure 4.19: Azraq's Shelter Design, 2023

Figure 4.20: Azraq's Businesses and Playgrounds, Google Earth, 2023

Figure 4.21: Azraq's Programs, Google Earth, 2023

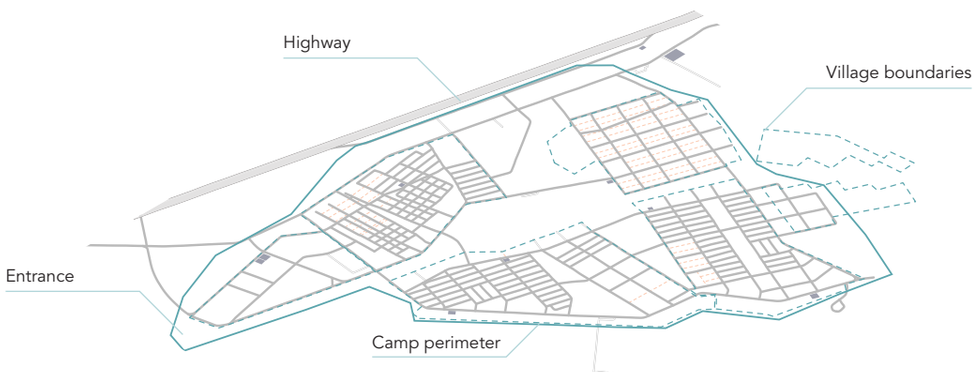


Figure 4.22: Azraq's Layout, Google Earth, 2023

the schools, clinics, and community centers. Concrete foundations are used for the units. Program layout: figure [4.21] shows how the villages are dispersed, with the amenities primarily located in the central areas. The location of villages and shelters creates large gaps in the camp, negatively impacting circulation and socialization. Many refugees complained about the long sandy walks to the market and wished amenities were closer (Chamma).

Shelters: the shelters were also studied to further analyze the spatial conditions in Azraq. As seen in figure [4.19], the shelters, like Oncupinar, are about 24m² and comprise a single room with access to electricity. The units are meant to hold up to five people, but families tend to be bigger, resulting in more crowding and a lack of privacy. Every six units are meant to share a lavatory. Although the residents were restricted from modifying the units, they started to add private kitchens, bathrooms, and storage, resulting in sewage issues in the camp. Furthermore, residents use textiles to create private areas adjacent to their units as they are completely exposed with no private areas or shading elements. Although the Jordanian government attempted to create a camp that fosters a more dignified living environment, the location, remoteness, organization, architecture, and level of security make the spatial conditions almost unbearable.

SOCIAL AND ECONOMIC CONDITIONS

Azraq is a massive camp that is not fully occupied, resulting in many residents being dispersed in the various villages. The large roads and space between blocks negatively impact the social fabric of the camp. Figure [4.20] shows that the camp has various playgrounds and soccer fields; however, adults lack gathering and social activity spaces, gardens, and recreational areas. Furthermore, elders tend to stay in their units all day because of the cold weather in the winter and hot weather in the summer, which can get uncomfortable and boring, hindering residents' psycho-social well-being (Chamma). Regarding the economic conditions, 375 Jordanian and Syrian-owned businesses in the camp provide some job opportunities. Many refugees, however, said their monthly vouchers are insufficient, and the lack of job opportunities only exacerbates the financial challenges. The struggle to make ends meet and move freely at Azraq makes it impossible to stay in the camp, forcing refugees to leave for urban areas or the Zaatari refugee camp.

"DURING SUMMER, WE HAVE TO STAY INSIDE TO AVOID THE SUN BUT WE CANNOT STAND THE HEAT; WE FEEL WE ARE BEING TOASTED INSIDE OUR CABINS"

Hajar, a refugee in Azraq (Chamma)

Figure 4.23: A Girl Carrying Water, Al Jazeera/Alisa Reznick, 2015

Figure 4.24: A Family Inside In their Unit, Al Jazeera/Alisa Reznick, 2015

Figure 4.25: Government Market, Al Jazeera Alisa Reznick, 2015

Figure 4.26: Women Standing Outside their Units, REUTERS, 2015

Figure 4.27: Azraq, World Vision/Robert Neufeld, 2014

LIVED EXPERIENCES

When analyzing the spatial, social, and economic conditions at the micro and macro scale, Azraq is isolated in the middle of a desert, far from an urban area, making access to resources difficult. The camp is completely exposed to a harsh desert environment with no protective vegetation. The scale of the camp makes it feel deserted, with large empty sandy areas between villages and blocks. Although the camp has the potential to accommodate 130,000 refugees, it is not designed to be more than a transient space. When refugees were asked about their level of happiness, they were lower than that of Zaatari despite Azraq having better services. Their major complaints included "lack of livelihood," non-contextual camp design, poor thermal performance of shelters, rats, lack of privacy, mudded interstitial spaces, lack of leisure and green spaces for the elderly, and most importantly, lack of "personal and social dignity" (Chamma).

REFLECTION

When reflecting on the comprehensive analysis of Azraq, it is apparent that the camp, like Oncupinar, satisfies the residents' physiological needs, including housing, food, water, basic infrastructure, etc. It also satisfies some of the safety needs, such as health care and employment. However, the camp is lacking when considering livelihood elements such as supportive dwellings and recreational areas. The highly secure, restricted, isolated, largely vacant, and regimented camp hinders refugees' sense of agency and dignity. There are opportunities for improvement on the macro and micro scales.

On the macro-scale, the camp can benefit from various interventions, including:

1. Densifying the camp and activating each village through context-specific amenities.
2. Implementing green spaces throughout the camp to improve the psycho-social well-being of refugees and improve the social fabric of the camp. This intervention can also provide shading and improve the thermal conditions in the camp.
3. Implementing recreational spaces for elders and women can reduce boredom and enhance social relationships and dignity.
4. Implementing tools and strategies to reduce the impact of elements on shelters (sand, wind, sun).
5. Transitioning shelters from corrugated galvanized iron to more permanent and transitional units to improve the thermal performance of the dwellings, improve privacy, increase residents' sense of dignity, and create supportive dwellings.
6. Activating the large interstitial spaces in the camp to be utilized as recreational and/or communal spaces.
7. Improving the transportation system in the camp for smoother circulation.

On the micro-scale, various initiates can create more adequate living conditions. These initiatives can include:

1. Designing larger dwellings to serve larger families and organic family growth.
2. Designing personalized spaces based on refugees' needs.
3. Creating private outdoor spaces in the interstitial areas to provide privacy to Syrian women who require enclosed spaces.
4. Improving the thermal performance of the units to enhance users' experience within their dwellings.
5. Developing water recycling methods to potentially use for irrigation of gardens.
6. Allowing residents agency over their spaces and environment.
7. Involving refugees in the design process of dwellings to increase their sense of agency and ownership, fostering a sense of dignity.

The macro and micro-interventions can increase livelihood opportunities and foster a sense of agency and dignity in this camp. Furthermore, it can potentially transform Azraq into a sustainable and functional city.

4.3 ZAATARI

Zaatari refugee camp in the Mafraq governorate in Jordan opened in July 2012 to accommodate the refugees fleeing Syria's ongoing conflict. Seen in figure [4.28] the camp is 10 km east of the Syrian border and is considered the second-largest camp, with a population of 82,000 people as of 2021. The Jordanian government built the camp in partnership with the UNHCR and other humanitarian organizations.

The Syrian Refugee Affairs Directorate, UNHCR, and 41 other humanitarian organizations manage the camp (Chamma). However, the Jordanian government is only responsible for the camp's protection; it is not involved in the internal affairs or needs of the camp. The camp was designed to accommodate 60,000 people; however, due to the gravity of the Syrian conflict and the number of people crossing the border for refuge in 2012, the camp accommodated 202,855 people (Aljazeera). Because the camp was opened during the emergency phase of the crisis, it is considered a spontaneous camp- it was constructed within two weeks with haphazard development due to the presence of people in the camp.

SPATIAL CONDITIONS

Location: Zaatari, unlike Oncupinar and Azraq, is only about 5 km from the established village of Zaatari. Size: the camp covers an area of 5.2 square kilometers and currently accommodates 82,000 people, which is 20,000 over the intended number of people it was meant to accommodate. Layout and infrastructure: the camp comprises 12 districts, with the first four being the original districts where Syrian refugees first arrived; as a result, they are the most densely populated areas. Unlike the other camps, Zaatari is considered a spontaneous camp because it was developed during the emergency phase of the Syrian conflict; therefore, the construction was ad hoc and haphazard. Many refugees moved their tents closer to neighbors or amenities, greatly influencing the work of the UNHCR and NGOs (Chamma). Because of the haphazard and ad hoc development of the camp, the infrastructure was also inadequate. "The general infrastructure networks currently in Zaatari are paved roads, electricity and lighting, drinking water distribution points, sewage and drainage networks for public use buildings, WASH facilities, and shelter units" (Chamma 79). The roads between districts are asphalt, with no sidewalks or paved spaces. The space between shelters is sand and gravel, negatively impacting the residents during the

Figure 4.28: Location of Zaatari, Google Earth, 2023

Figure 4.29: Areal Image of Zaatari, Google Earth, 2023

summer months when there are sandstorms and the winter when it rains and puddles of water form. While the spatial conditions in Zaatari have improved since 2012, they are still in-dignifying and require improvement in various scales.

Programs and amenities: as seen in figure [4.33], there are various programs and amenities in the Zaatari camp, including:

- Shelters: Zaatari has had various shelter typologies; when the camp first opened, the UNHCR distributed tents to refugees with the intention of Zaatari being a tent camp; however, when the conflict became protracted, and the Arabic Gulf Countries made donations, the units were updated to 24m^2 prefabricated units with a kitchen and private bathroom (Chamma). There are now 26,000 prefabricated units being used in the camp.
- Clinics: eight clinics in the camp "provide primary and selective secondary and tertiary healthcare services for refugees, including comprehensive reproductive health services, antenatal care, community health intervention, nutrition support activities, screening and treatment, health promotion, and mental health support. Some of the clinics also provide 24/7 emergency services" (UNHCR).
- Schools: the camp has 32 schools that are supported by the United Nations International Children's Emergency Fund (UNICEF) and the Ministry of Education (MoE). The schools provide education from primary to secondary levels, and they have vocational training centers for adults.
- Mosques: there are 120 mosques where residents go for religious needs and services and act as spaces for congregations. In Zaatari, this is a critical space positively influencing the social fabric of the camp.
- Playgrounds and community centers: many playgrounds and 58 community centers are designed for children to play and socialize. This is a great amenity for children's psychosocial needs.

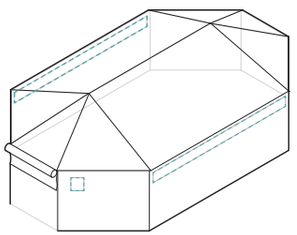


Figure 4.30: Zaatari's Tent Shelter Design Used in the First Year, 2023

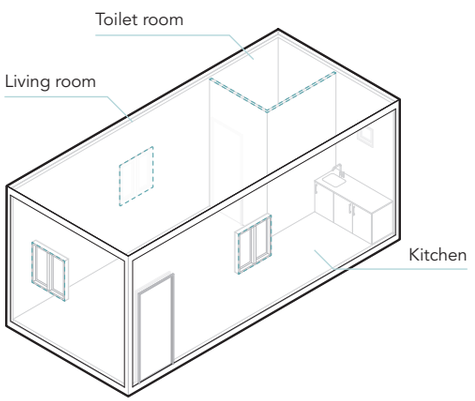


Figure 4.31: Zaatari's Prefabricated Shelter Design, 2023

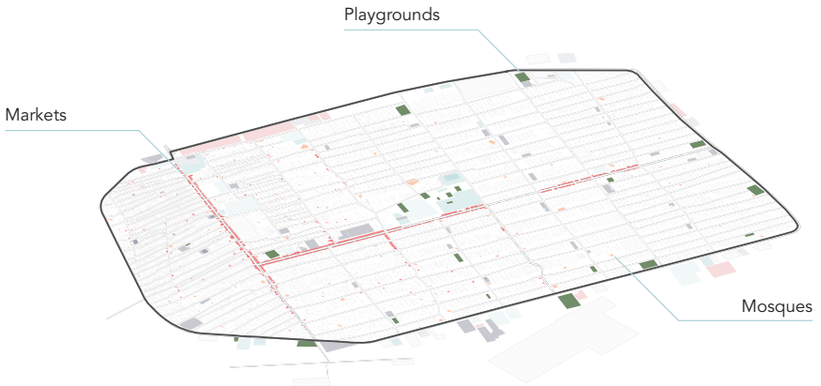


Figure 4.32: Zaatari's Businesses and Playgrounds, Google Earth, 2023

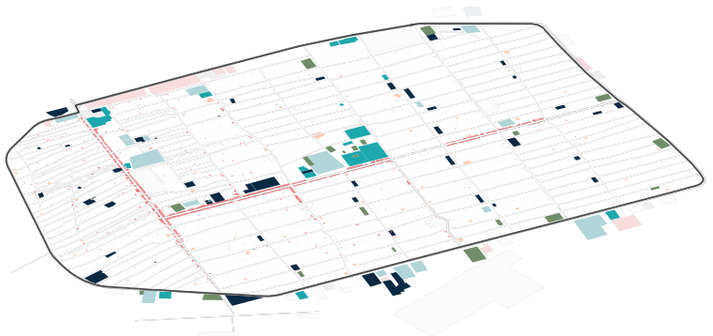


Figure 4.33: Zaatari's Programs, Google Earth, 2023

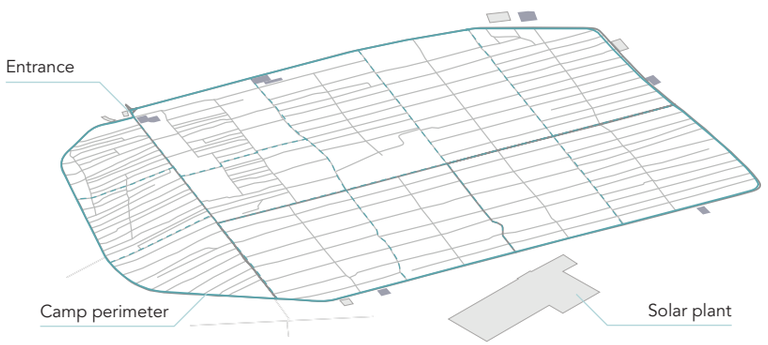


Figure 4.34: Zaatari's Layout, Google Earth, 2023

- Syrian-owned shops: the refugees started over 3000 on the two commercial corridors located on Al Yasmine Street and Al Souq Street. The shops include bakeries, barber shops, perfume shops, clothing shops, appliances, construction materials, etc. This has created an economic hub in the camp, improving the livelihood of refugees (Chamma).
- Distribution centers: there are various distribution centers in the camp where humanitarian organizations such as the World Food Program (WFP) provide the residents with rice, lentils, oil, and canned foods.
- Security: the camp has a perimeter fence, checkpoint, and patrol to ensure residents' safety.
- Solar plant: "in partnership with the Government of Jordan, Japan international cooperation Agency (JICA), the Government of the Czech Republic and funded by KFW Development Bank, UNHCR has established the largest solar plant ever built in a refugee camp, covering the electricity needs of Zaatari's inhabitants. 100% of shelter units now have access to electricity, receiving 12 hours of electricity daily" (Chamma 79).

Materiality: the camp utilized multiple building materials, including prefabricated shelter materials and concrete blocks for schools, clinics, and other administrative facilities. The residents use corrugated metal panels and timber for their additions to their shelters to increase space, privacy, and shading. Program layout: figure [4.33] shows how the camp's programs and shelters are laid out. "Most of the first service buildings in the camp are located in the area of the first phase of construction of the camp, districts 1, 2, 3 and 4. The camp grew very quickly, so most of the new service buildings were added on to a rapid expansion (District 5) or added next to the surrounding ring road (Districts 6-12) to respond to the high density of refugees in the new districts 5-12" (Chamma). When the camp opened, tents were unorganized to accommodate people as fast as possible. When the camp grew, however, "the block design followed the guidelines. Each community had 10 shelter units organized in a grid, supported by community kitchens and public toilets for men and women, which all were later transformed by refugees" (Chamma). Many refugees interviewed by Chamma complained about the long distances they walked to clinics, schools, and distribution points because of the lack of proper transportation. The ad hoc and haphazard development of the camp led to various issues.

"HOW SHOULD I ENTERTAIN MY WIFE AND KIDS? THERE'S NOTHING IN THE CAMP SUCH AS GARDENS OR FORMAL OPEN SPACES WHERE I CAN TAKE MY FAMILY. WE HAVE NOWHERE TO WALK, SIT OR GO"

Abu Abdallah, a refugee in Azraq (Chamma)

Figure 4.35: The Commercial Corridor, Taylor Luck, 2022

Figure 4.36: Residents in Zaatari, Getty Images/Khalil Mazraawi, 2021

Figure 4.37: Zaatari, Peace Insight/Adam Leake, 2015

Figure 4.38: Kitchen, Vermont Public/Nina Neck, 2017

Figure 4.39: A Man Building Shading, Getty Images/Khalil Mazraawi, 2021

Shelters: the shelters were also studied to further analyze the spatial conditions in Zaatari. As seen in figure [4.31], the shelters, like Oncupinar and Azraq, are about 24m^2 and comprise a private kitchen and bathroom. The units are designed to hold six people; however, the distribution of the units has been unfair, with some families getting multiple caravans while others have only one. "At each phase of growth of the camp, as new refugees arrived, shelters were provided according to what was available at the time of their arrival. Some existing shelters were also replaced and upgraded by UNHCR. This ad hoc development of the camp led to the mixture of shelter types" (Chamma 82). As of 2015, however, the shelters are all prefabricated units. The residents of Zaatari have been consistently dismantling, adding, and modifying their environment to satisfy their needs and mimic their spaces in Syria.

In 2016, the Zaatari camp had numerous individual latrines, shower units, and public WASH centers, such as kitchens and bathrooms, distributed throughout the camp. Despite their availability, Syrian refugees refrained from utilizing them due to their religious and cultural practices. Rather, they disassembled the public centers and repurposed the pipes, plumbing fixtures, and tiling materials to construct private bathrooms in their shelter units. Hence, it is crucial to note that the 'public' system did not align with the refugees' customs and beliefs (Chamma). The incident highlights a crucial lesson regarding the significance of comprehending refugees' history, traditions, and necessities before designing and constructing facilities. Furthermore, it emphasizes the importance of engaging them in the camp's planning process.

SOCIAL AND ECONOMIC CONDITIONS

In general, refugees residing in the Zaatari camp expressed that although the camp is located near urban areas, the inhabitants are restricted from working in local cities/villages or venturing outside the camp without first obtaining permission from the community police office within the camp. This permission grants them access to leave the camp for a specific duration, depending on the reason. Considering these limitations, refugees have created alternative job opportunities, social networks, and livelihoods within the camp to meet their needs. Many refugees also noted that social interaction within the camp is favorable, and there are no cultural or religious differences among the Syrian community. However, when asked about leisure activities, most refugees reported they were unavailable, including basic amenities that could provide leisure.

LIVED EXPERIENCES

The lived experience in the Zaatari camp can be challenging for refugees as the camp was established spontaneously and was developed haphazardly because of the number of refugees that needed accommodation during the development of the camp. The physical environment is harsh, with extreme temperatures, strong winds, and dust storms. The camp is densely populated, with shelters often overcrowded and families having limited privacy. Unlike other camps, Zaatari has a thriving commercial corridor that provides residents with many jobs. However, a lot of residents still face limited economic opportunities and struggle to find work, resulting in frustration and helplessness.

Despite these challenges, many refugees reported being happy and considered Zaatari their new home (Chamma). The residents have formed social structures and networks; many kids participate in sports, arts, and education programs. The sense of community and mutual support among refugees is strong, and many have found ways to maintain their cultural traditions and practices. However, a major lack of leisure and recreational spaces hinders the residents' psycho-social well-being.

REFLECTION

When reflecting on the comprehensive analysis of Zaatari, it is apparent that the camp, like Oncupinar and Azraq, satisfies the residents' physiological needs, including housing, food, water, basic infrastructure, etc. However, it is important to mention that they are inadequate. Unlike the other camp, Zaatari has over 3000 businesses that satisfy some refugees' safety needs, such as health care and employment. Unlike the other camp, refugees in Zaatari have been able to modify their spaces and dismantle communal kitchens and washes to privatize and personalize. The refugees have experienced more agency in Zaatari than in any other camp, which ultimately positively influenced refugees' sense of belonging and ownership. However, the camp still needs to be improved when considering elements contributing to psycho-social well-being, such as dignified living environments and leisure opportunities.

Similar to Azraq, on the macro-scale, the camp can benefit from various interventions, including:

1. Implementing green spaces throughout the camp to improve the psycho-social well-being of refugees and improve the overall social fabric of the camp. This intervention can also provide shading and improve the thermal conditions in the camp.
2. Implementing recreational spaces for elders and women can reduce boredom and enhance social relationships and dignity.
3. Implementing tools and strategies to reduce the impact of elements on shelters (sand, wind, sun).
4. Transitioning shelters from corrugated galvanized iron to more permanent and transitional units to improve the thermal performance of the dwellings, improve privacy, increase residents' sense of dignity, and create supportive dwellings.
5. Activating the large interstitial spaces in the camp to be utilized as recreational and/or communal spaces.
6. Improving the transportation system in the camp for smoother circulation.

On the micro-scale, various initiates can create more adequate living conditions. These initiatives can include:

1. Designing larger dwellings to serve larger families and organic family growth.
2. Designing personalized spaces based on refugees' needs.
3. Creating private outdoor spaces in the

interstitial areas to provide privacy to Syrian women who require enclosed spaces.

4. Improving the thermal performance of the units to enhance users' experience within their dwellings.
5. Developing water recycling methods to potentially use for irrigation of gardens.
6. Involving refugees in the design process of dwellings to increase their sense of agency and ownership, fostering a sense of dignity.

The macro and micro-interventions can further increase livelihood opportunities and agency and foster a sense of dignity in the camp.

FINAL REFLECTION ON THE THREE CAMPS

The camps have similarities and differences based on their management entity and what phase of the Syrian conflict the camps were established. Zaatari started as a spontaneous camp during the emergency phase of the Syrian crisis, then became a formally planned camp as the influx of refugees increased. It was established within two weeks, making the planning and development of the camp extremely haphazard, as over 200,000 refugees arrived at the campsite within months and had to be accommodated with tents (Chamma). This led the refugees to move their shelters close to neighbors and amenities such as public kitchens and washes, which changed the camp's layout. This also led to poor infrastructure development, minimal paved roads, and no drainage system or electrical grid. Although the Zaatari camp's spontaneity negatively impacted the development of the infrastructure, it enabled refugees to move and modify their spaces, which was not possible in Oncupinar and Azraq. On the other hand, Oncupinar and Azraq were planned and established after the emergency phase allowing the infrastructure, layout, and organization to be much more developed. However, because the units were fixed and there were limitations to refugees personalizing their spaces, many refugees reported being unhappy and leaving the camps.

In terms of location and building guidelines, the camps are all located in desolate areas close to military bases, highways, and borders. They also all utilized the UNHCR standards for design, planning, and development, but Oncupinar is the one that has implemented the guidelines to their full potential. While it is necessary for the camps to be near the border for easy access, it has immensely impacted refugees' ability to integrate into the local community and economy, further hindering their livelihoods, sense of belonging, and dignity.

In terms of the social and economic conditions, all the camps lack outdoor spaces for families, which hinders the social fabric of the camps. Adults in all three camps reported being bored and having nothing to do, which "deteriorated social relationships in the camps" (Chamma). However, the ability to personalize spaces and mimic previous environments in Zaatari increased refugees' sense of belonging. Zaatari residents also started over 3000 businesses despite being warned not to by the Jordanian government, which allowed refugees to better support themselves and bring over 13 million in revenue a month (PBS). The ability to support themselves has increased their sense of dignity and agency, which is highly missing in Oncupinar and Azraq, where refugees are restricted from personalizing their spaces and starting businesses. Azraq residents have even moved to Zaatari for better employment opportunities and freedom.

In conclusion, while the infrastructure and layout of Oncupinar and Azraq provide a more permanent place, their social and economic fabric creates a transient space. In contrast, Zaatari's social and economic fabric makes it a more dynamic yet permanent place, leading to more growth and development in the camp throughout the last decade. Furthermore, it offers great potential for interventions to improve living conditions and empower refugees as the camp becomes an informal city. The research will continue in that camp because of Zaatari's growth, dynamic nature, and potential to become a city. Kilian Kleinschmidt, the former manager of Zaatari, said, "[g]overnments should stop thinking about refugee camps as temporary places…[t]hese are the cities of tomorrow… [i]n the Middle East, we were building camps: storage facilities for people. But the refugees were building a city" (Radford).

5.0 FOCUS AREA

After thoroughly analyzing the three camps, Zaatari was chosen as the focus area to further the investigation of "temporary" settlements. Digital models, animations, maps, and images were developed to understand how Zaatari has evolved and the type of agency refugees experience. The chapter will analyze the findings and reflect on the overall urban changes, district conditions, user agency, and concerns. The chapter will also investigate design precedents that have addressed concerns like the ones present in Zaatari. This in-depth analysis of Zaatari and existing solutions are intended to ground and inform the thesis proposal.

5.1 ZAATARI'S EVOLUTION

Zaatari grew quickly in its early years and stabilized gradually, as seen in figure [5.2]. While there is a harsh ring road around the camp defining the camp perimeter, various amenities such as schools, hospitals, distribution points, and playgrounds develop outside the perimeter, which begs the question, will this camp grow beyond its perimeter in the future? Figure [5.3] is a site plan of Zaatari that analyzes the urban environment of the camp, the density, district boundaries, main roads, activity zones, and the entrance of the camp. This map reveals that the camp is highly dense in the first four districts of the camp, where the initial influx of refugees arrived and where most of the amenities were. It also shows that the districts that developed later are less dense with more order to how the shelters are placed. The areas of activity are primarily on Al Yasmin Street and Al Souq Street, the two main commercial corridors where 3000 plus businesses are situated. The other areas of activity in the camp are primarily near schools and hospitals. This map clarifies the relationship between user activity and programs, the density, and the organization of the camp.

Digital models were created to further understand each district's assets and the form of buildings in relationship to one another. The following sections will elaborate on each district's assets, similarities, and differences and discuss new findings.

DISTRICTS 1 AND 2, FIGURE [5.4]
As mentioned previously, districts one and two are one of the earlier occupied areas resulting in more density and clustering of shelters. It also has very narrow streets resembling alleyways. Refugee-owned businesses fully line Al Souq Street, highly activating the districts. Moreover, the districts have eight community centers that serve the youth in Zaatari. These spaces are very valuable as they provide a space for children to play sports, create arts and crafts and spend quality time with other children. Critical elements that have become social anchors for Syrian refugees are the mosques which are dispersed throughout the two districts and are highly utilized by the residents.

DISTRICTS 3 AND 4, FIGURE [5.5]
Districts three and four, like one and two, are densely populated; however, they are also the districts where most administration buildings were initially constructed. The presence of administration buildings, schools, community

Figure 5.1: Zaatari's Population Over the Last Decade, Aljazeera, 2021

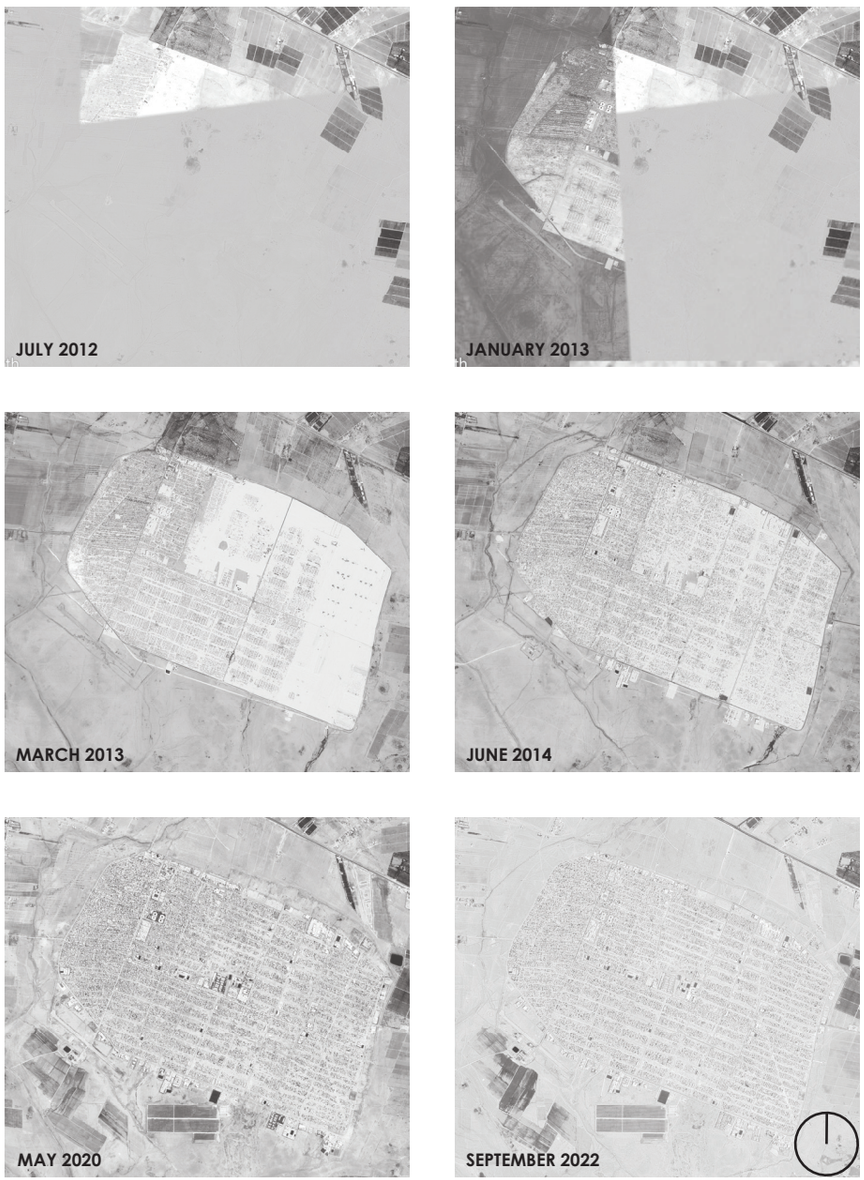


Figure 5.2: Zaatari's Evolution, Google Earth, 2012-2023

centers, and distribution centers drew refugees to live within the two districts and within the vicinity of the amenities. The presence of business along Al Souq and Al Yasmin Street activates the districts.

DISTRICT 5, **FIGURE [5.6]**
District five was developed after the emergency phase of the crisis, making the district less populated. The shelters are more dispersed and orderly, unlike the previous districts. The layout is more gridded and has more defined boundaries between the residential part of the district and the commercial part. The district is primarily residential, with a large area on Al Yasmin Street dedicated to clinics, schools, and some businesses. What is also emerging in district five are the large gaps between the blocks, which resulted from the dismantling and privatization of the communal spaces in those areas also illustrated in figure [5.16].

DISTRICT 6, **FIGURE [5.7]**
District six, like five, is organized on a grid with blocks of shelters and large gaps between blocks. The district has various community centers, schools, clinics, and distribution points; however, they are vacant. The main activity in the district is on Al Yasmin Street, where businesses fully line the corridor. The gaps between the blocks have the potential to be activated and better utilized to serve the residents.

DISTRICT 7, **FIGURE [5.8]**
District seven is the furthest from the main clinics, schools, and distribution points, making it less active and less populated. There are also fewer businesses on Al Yasmine Street in this district. Similarly to the previous districts, there are large gaps that many refugees complained about and believe hinder the social fabric of the camp. The second entrance of the camp connects to district seven.

DISTRICT 8, **FIGURE [5.9]**
While district eight is the furthest from the old area's entrance and amenities, it has other assets within and outside the district. The district is on a grid and has a large road going through it diagonally. The district also has multiple community centers, mosques, and parks. The most active area of the district is outside the perimeter, where a school, clinic, and administration building are located.

DISTRICT 9, **FIGURE [5.10]**
Although district nine seems to have similar assets to the other districts, it is not directly next to amenities. The average time it takes to reach a school or clinic on foot is 12 minutes. The gaps between the shelters and blocks make it a great location to test ideas and potential interventions that may activate the area and introduce programs that can address refugees' needs. District nine will be utilized to test ideas and potential interventions.

DISTRICT 10, **FIGURE [5.11]**
District ten is highly active because of the clinic in the northwest and the schools in the southeast of the district. The district is also where many businesses are located along Al Yasmine Street and dispersed between the units and the blocks. Similar to other districts developed later, it is on a grid with the main roads paved and the secondary roads sand.

DISTRICT 11, **FIGURE [5.12]**
District eleven is composed primarily of shelters with many mosques and two community centers. It has access to the amenities in the Northwest, located in district four. The gaps here are significantly larger, haphazard, and connect to the other districts. Some of the mosques seem to be placed on gaps; however, large sandy areas remain underutilized.

DISTRICT 12, **FIGURE [5.13]**
District twelve, being close to the old districts, amenities on the Southeast side, and the commercial corridor make it a better location for refugees to live in. While the gaps in this district are not as large, they can still be transformed into more active public spaces that serve the residents.

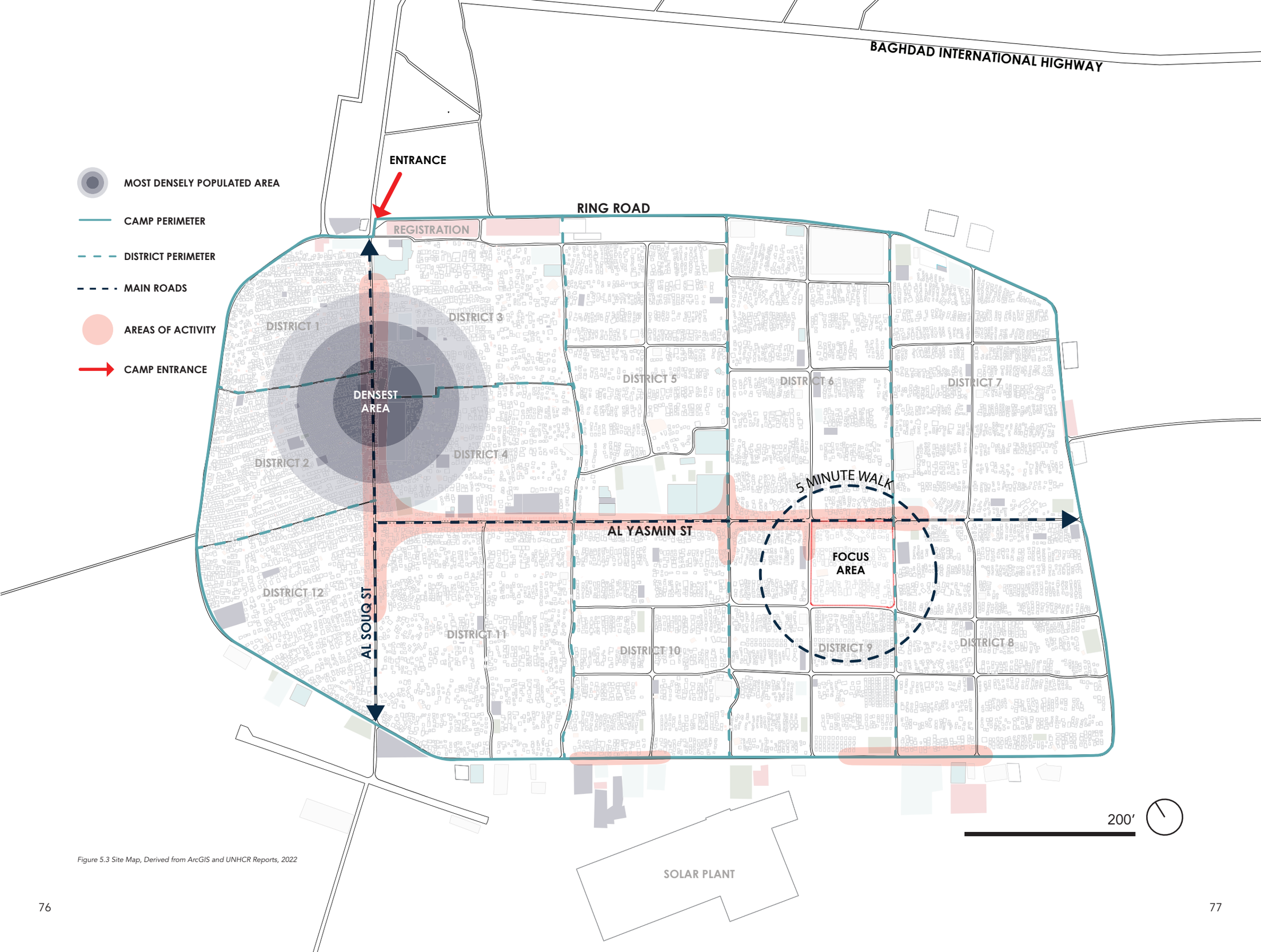


Figure 5.3 Site Map, Derived from ArcGIS and UNHCR Reports, 2022

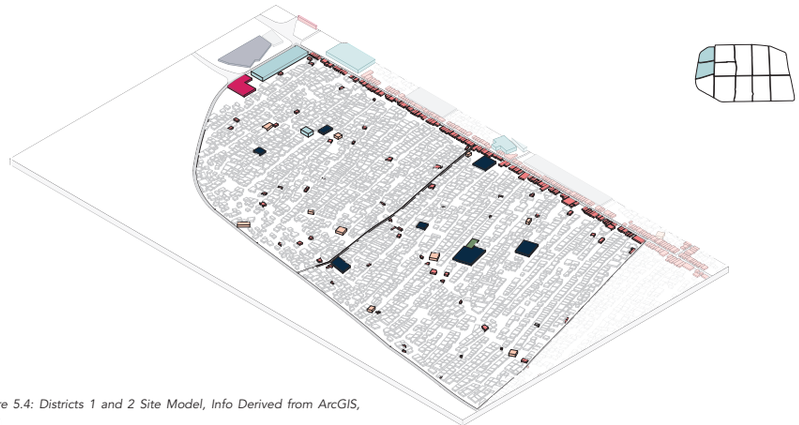


Figure 5.4: Districts 1 and 2 Site Model, Info Derived from ArcGIS, 2023

DISTRICTS 1 AND 2

As mentioned previously, districts one and two are one of the earlier occupied areas resulting in more density and clustering of shelters. It also has very narrow streets resembling alleyways. Refugee-owned businesses fully line Al Souq Street, highly activating the districts. Moreover, the districts have eight community centers that serve the youth in Zaatari. These spaces are very valuable as they provide a space for children to play sports, create arts and crafts and spend quality time with other children. Critical elements that have become social anchors for Syrian refugees are the mosques which are dispersed throughout the two districts and are highly utilized by the residents.

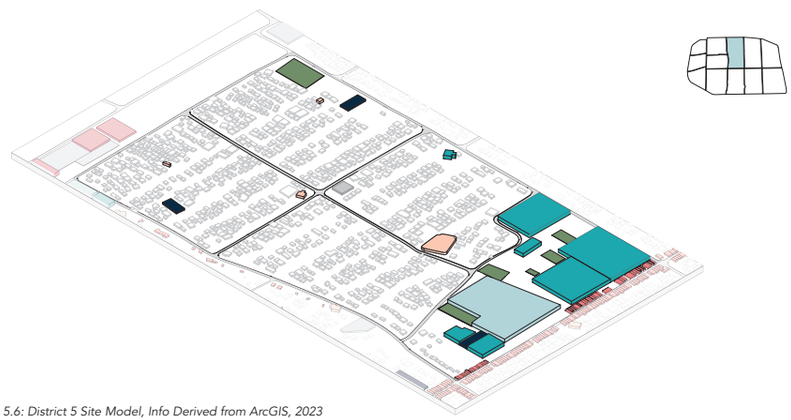


Figure 5.6: District 5 Site Model, Info Derived from ArcGIS, 2023

DISTRICT 5

District five was developed after the emergency phase of the crisis, making the district less populated. The shelters are more dispersed and orderly, unlike the previous districts. The layout is more gridded and has more defined boundaries between the residential part of the district and the commercial part. The district is primarily residential, with a large area on Al Yasmin Street dedicated to clinics, schools, and some businesses. What is also emerging in district five are the large gaps between the blocks, which resulted from the dismantling and privatization of the communal spaces in those areas.

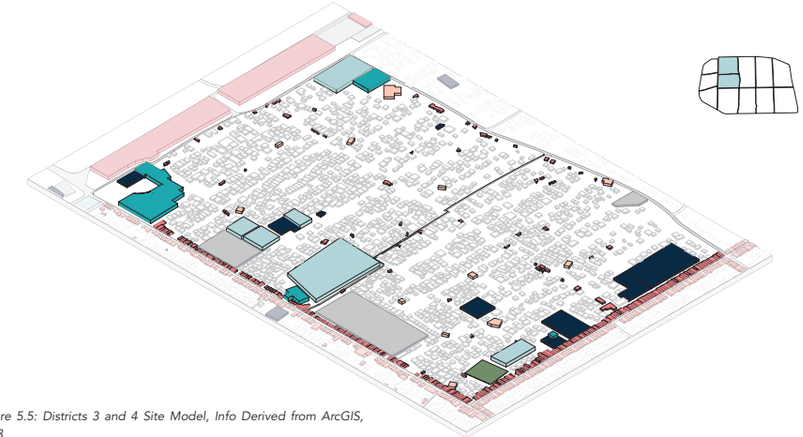


Figure 5.5: Districts 3 and 4 Site Model, Info Derived from ArcGIS, 2023

DISTRICTS 3 AND 4

Districts three and four, like one and two, are densely populated; however, they are also the districts where most administration buildings were initially constructed. The presence of administration buildings, schools, community centers, and distributions drew refugees to live within the two districts and within the vicinity of the amenities. The presence of business along Al Souq and Al Yasmin Street activates the districts.

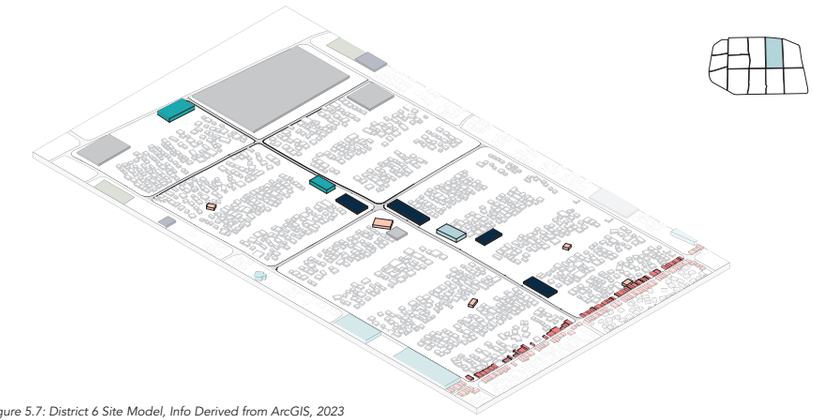


Figure 5.7: District 6 Site Model, Info Derived from ArcGIS, 2023

DISTRICT 6

District six, like five, is organized on a grid with blocks of shelters and large gaps between blocks. The district has various community centers, schools, clinics, and distribution points; however, they are vacant. The main activity in the district is on Al Yasmin Street, where businesses fully line the corridor. The gaps between the blocks have the potential to be activated and better utilized to serve the residents.

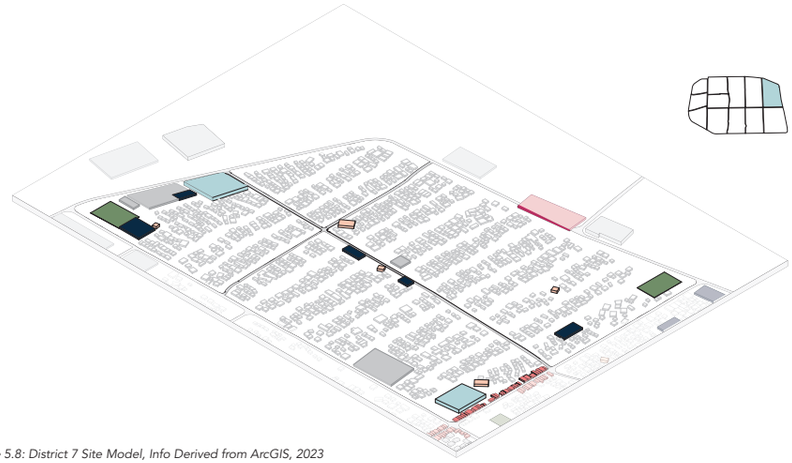


Figure 5.8: District 7 Site Model, Info Derived from ArcGIS, 2023

DISTRICT 7

District seven is the furthest from the main clinics, schools, and distribution points, making it less active and less populated. There are also fewer businesses on Al Yasmine Street in this district. Similarly to the previous districts, there are large gaps that many refugees complained about and believe hinder the social fabric of the camp. The second entrance of the camp connects to district seven.

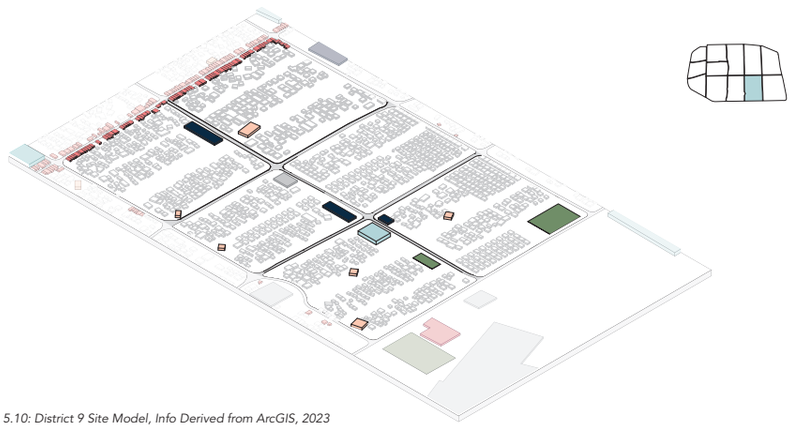


Figure 5.10: District 9 Site Model, Info Derived from ArcGIS, 2023

DISTRICT 9

Although district nine seems to have similar assets to the other districts, it is not directly next to amenities. The average time it takes to reach a school or clinic on foot is 12 minutes. The gaps between the shelters and blocks make it a great location to test ideas and potential interventions that may activate the area and introduce programs that can address refugees' needs. District nine will be utilized to test ideas and potential interventions.

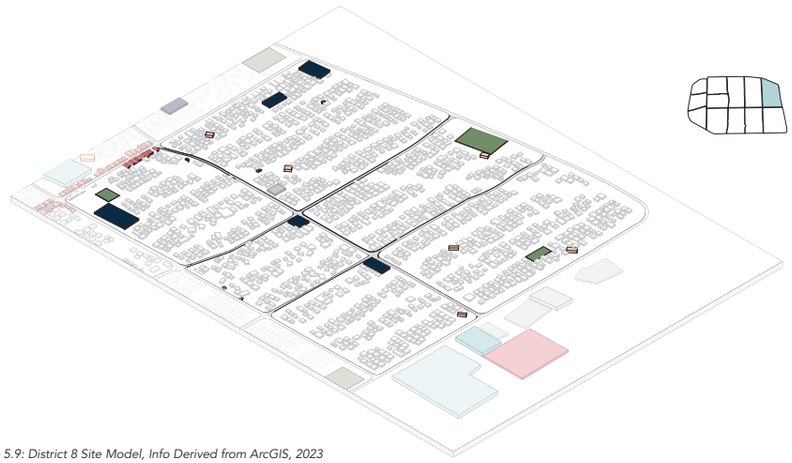


Figure 5.9: District 8 Site Model, Info Derived from ArcGIS, 2023

DISTRICT 8

While district eight is the furthest from the old area's entrance and amenities, it has other assets within and outside the district. The district is on a grid and has a large road going through it diagonally. The district also has multiple community centers, mosques, and parks. The most active area of the district is outside the perimeter, where a school, clinic, and administration building are located.

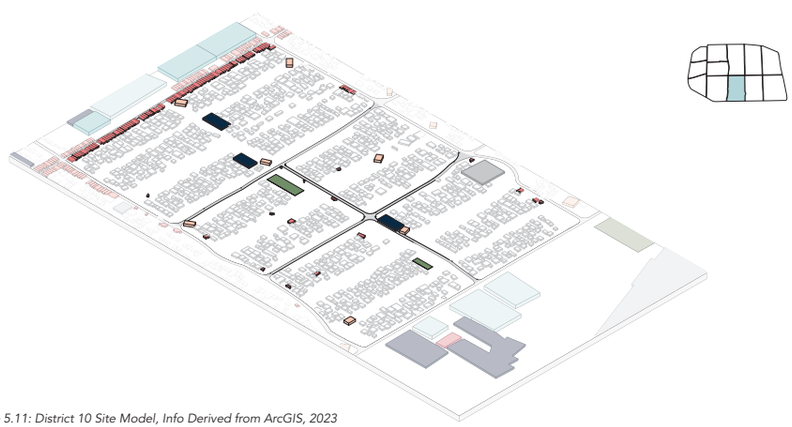


Figure 5.11: District 10 Site Model, Info Derived from ArcGIS, 2023

DISTRICT 10

District ten is highly active because of the clinic in the northwest and the schools in the southeast of the district. The district is also where many businesses are located along Al Yasmine Street and dispersed between the units and the blocks. Similar to other districts developed later, it is on a grid with the main roads paved and the secondary roads sand.

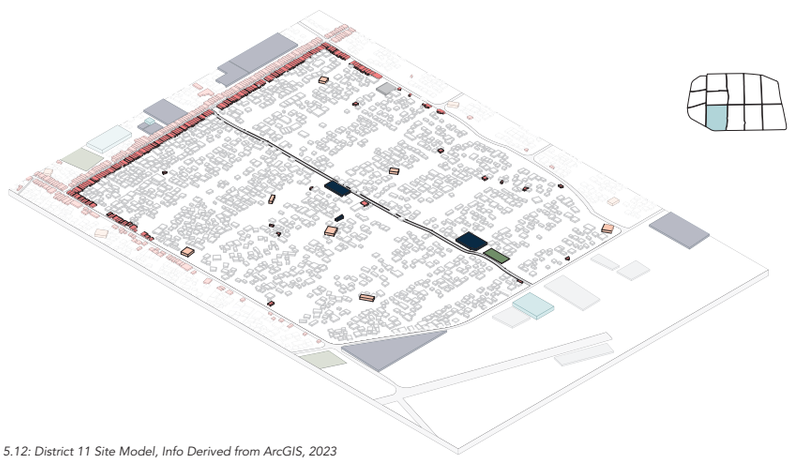


Figure 5.12: District 11 Site Model, Info Derived from ArcGIS, 2023

DISTRICT 11

District eleven is composed primarily of shelters with many mosques and two community centers. It has access to the amenities in the Northwest, located in district four. The gaps here are significantly larger, haphazard, and connect to the other districts. Some of the mosques seem to be placed on gaps; however, large sandy areas remain underutilized.

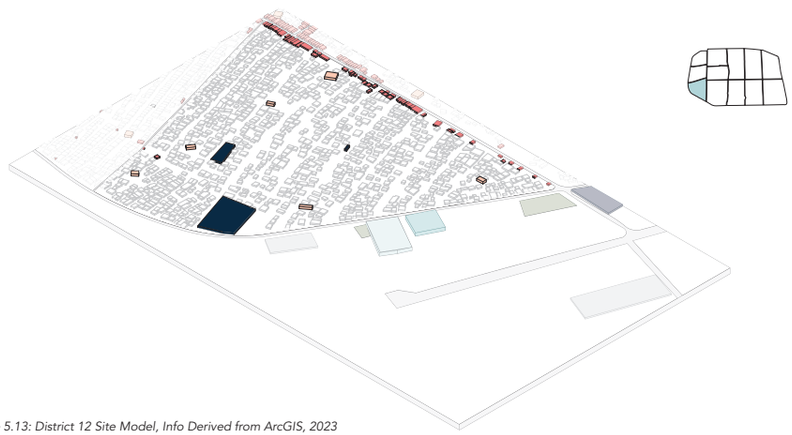


Figure 5.13: District 12 Site Model, Info Derived from ArcGIS, 2023

DISTRICT 12

District twelve, being close to the old districts, amenities on the Southeast side, and the commercial corridor make it a better location for refugees to live in. While the gaps in this district are not as large, they can still be transformed into more active public spaces that serve the residents.

5.2 AGENCY IN ZAATARI

SPATIAL AND SOCIAL AGENCY

Syrians who live in Zaatari are primarily from Daraa, where they had big houses with many rooms and courtyards with large water fountains and gathering areas. However, things of the past in Zaatari. A block in district nine was utilized to understand how refugees have reorganized, dismantled, and expanded their environment. Figure [5.15] on the next page shows the UNHCR proposal for the area, which shows the shelters placed in rows with communal kitchens and washes placed in between. However, the layout, as Dalal also emphasizes, does not satisfy the needs of Syrian refugees. The communal spaces in the camp went against the cultural needs of Syrian women who need to be segregated from men. Consequently, refugees started to dismantle the communal kitchens and washes to privatize them. As seen in figure [5.16] on the following page, refugees also clustered units with other family members and neighbors, creating more intimate spaces like courtyards and private alleys that resembled their environment in Syria. This exercise revealed refugees' need for more contextual camp design concepts that are culturally sensitive. It further shows refugees' resilience and the need to be agents of their environment.

In terms of organization and "zoning," what seems to happen is that businesses get placed on the main road, which subtly separates the commercial spaces from the residential area. Moreover, the areas formerly housed the communal spaces turned into large gaps that primarily house new mosques, activating the area on Fridays when Syrian residents go to prayers. These gaps have the potential to become markets that can be activated after prayers or green-ways that provide an area for refugees to walk, sit, and gather.

ECONOMIC AGENCY

Many of the refugees had businesses, stable jobs, and were economically self-sufficient; however, when they were displaced during the Syrian conflict, they lost all of that. Starting life over in Zaatari was challenging as refugees relied on the UNHCR rations of 28 dollars a month, barely enough for two weeks of groceries and basic needs. Images of the commercial corridor were thoroughly analyzed to see what businesses refugees started and how they transformed their shelters into commercial spaces seen in figure [5.14]. The images reveal that there are bakeries, tobacco shops, restaurants, pickle shops, bike shops, ice cream shops, home goods, perfumes, retailers, men's wear, bridals, cleaning products, tailors, and appliance stores. While the study was focused on uncovering economic agency, the images also show the lack of shading and proper commercial space to house the good of the businesses. Many items are placed out on the street; bikes are seen to be used as the main means of transportation. Zaatari is highly active and dynamic, and while it is in dire need of improvements, the refugees are doing their all to thrive.

Figure 5.14: Street Stitch of the Al Souq Street in Zaatari, Images Derived from Google Maps, 2018

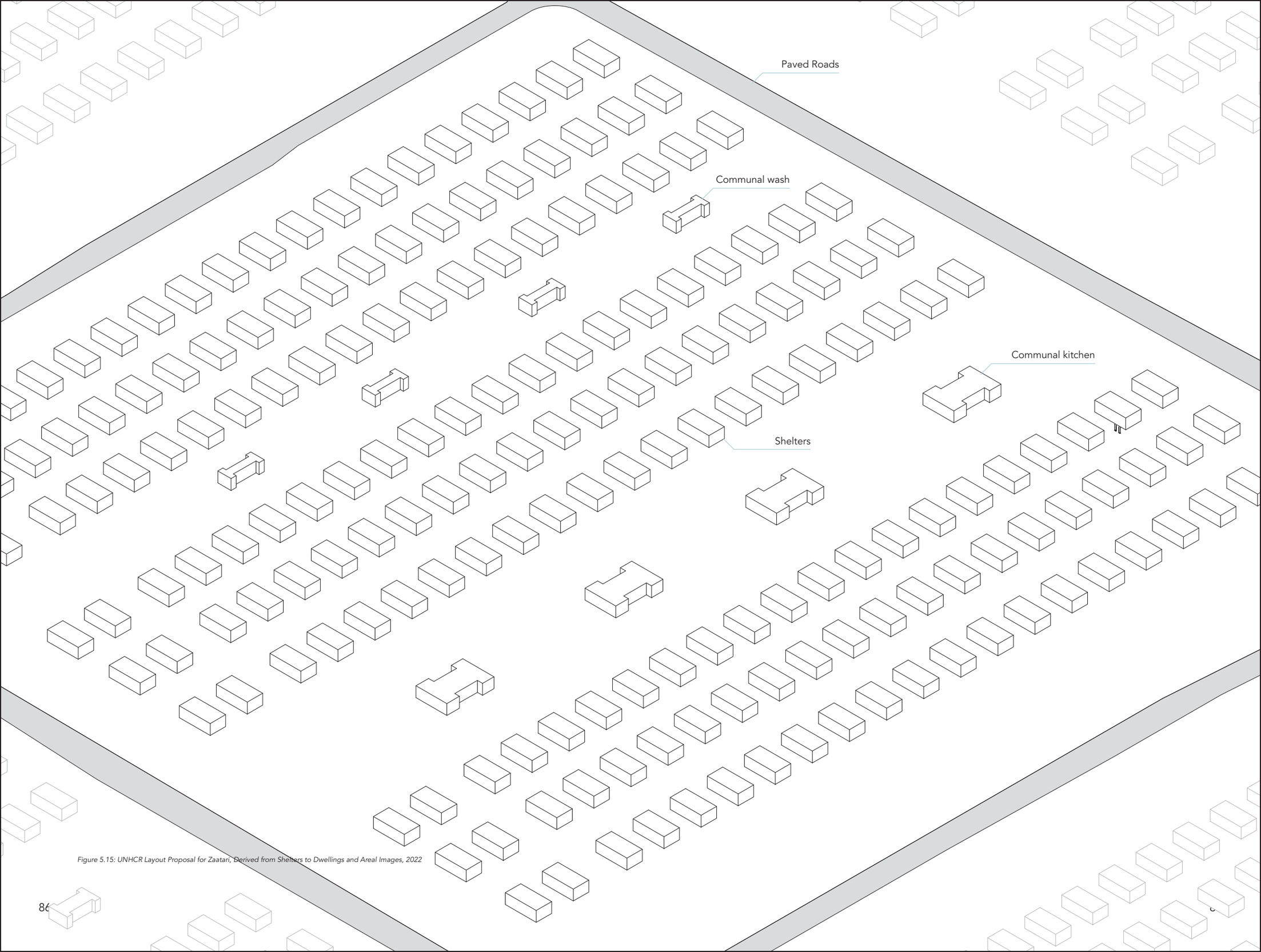


Figure 5.15: UNHCR Layout Proposal for Zaatari, Derived from Shelters to Dwellings and Areal Images, 2022

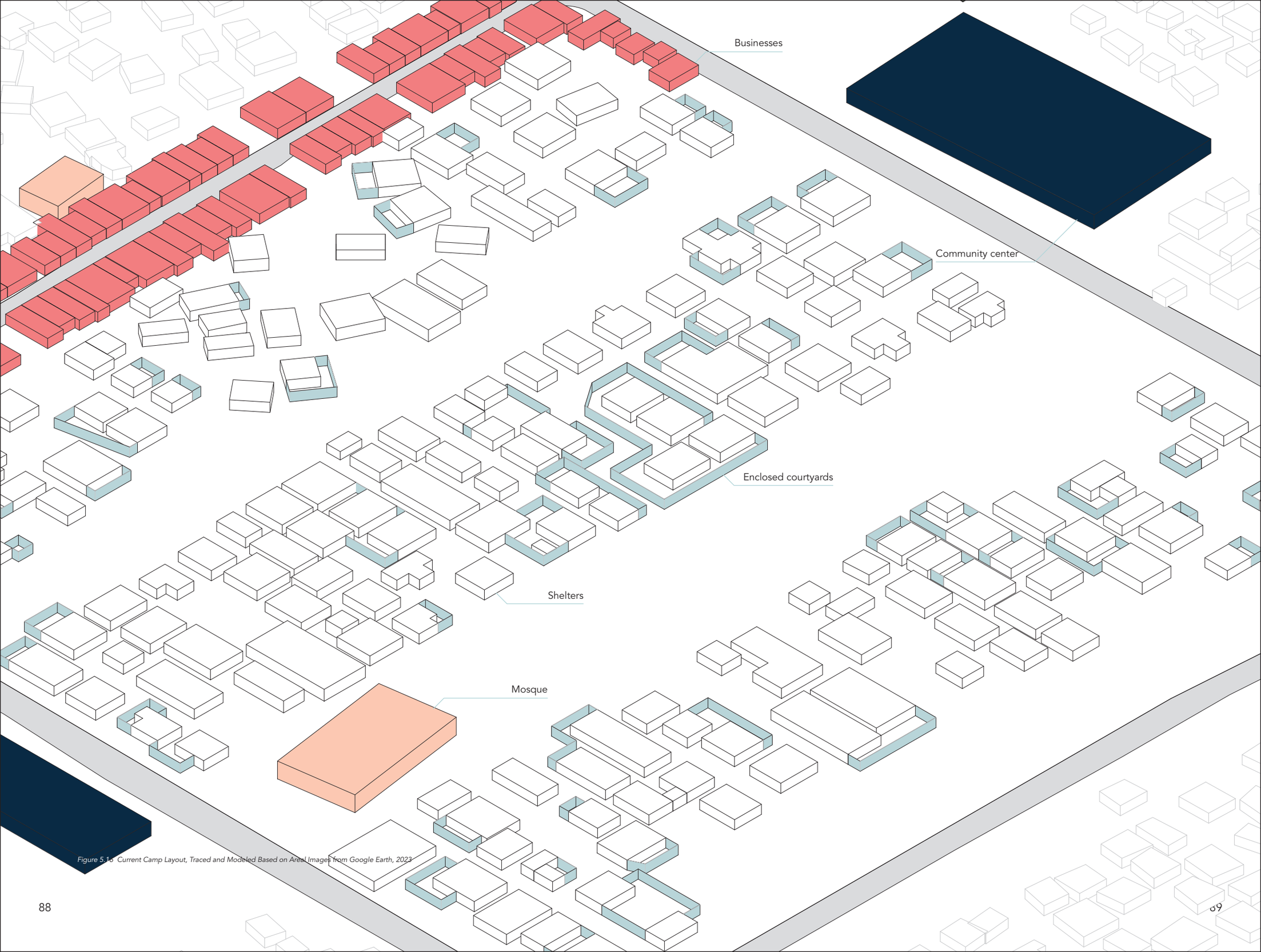


Figure 5.1.5 Current Camp Layout, Traced and Modeled Based on Areal Images from Google Earth, 2023

5.3 REFUGEE CONCERNS IN ZAATARI

To ground the research on refugees' concerns and needs, interviews conducted by Nasr Chamma in Zaatari were analyzed and thematized into eight categories, seen in figure [5.18] on pages (92-93). The concerns are as follows.

1. Inadequate camp design
2. Improper infrastructure
3. No protection from elements
4. Un-supportive shelter design
5. Inability to be self-sufficient.
6. In-dignifying living conditions
7. Lack of recreational areas
8. Lack of psycho-social well-being.

Like all of us, refugees have diverse needs and wish to have productive lives where they can work and support themselves, learn, and socialize with others. Although the refugees have modified their spaces, developed social networks, and have religious spaces where they can congregate, they are still largely lacking "formal open spaces" where they can socialize and rest (Chamma). These concerns directly correlate with the lack of livelihood, agency, dignity, and psycho-social well-being. While these concerns call for interdisciplinary large-scale interventions, it is important to recognize the limitation of time, policy reform, and funding. Therefore, it is valuable to focus on smaller-scale feasible interventions that aim to foster the existing agency in the camp and incrementally address refugees' concerns and improve their living conditions. As a result, the thesis focuses on three prominent needs of refugees, including shading, multi-purpose spaces, and finally, improving the social fabric of the camp, as seen in figure [5.17]

While shading is critical to prevent UV-related health problems, it can provide privacy, which is essential for human dignity. Having a private space where people can retreat can help them feel more in control of their environment and personal space. This is particularly important in refugee camps and other communal living situations where people may live in close quarters. This is currently lacking in all the camps, including Zaatari.

Zaatari is a great learning lesson showing how the UNHCR's guidelines are insufficient when camps become protracted and become informal cities where residents start businesses and attempt to urbanize their settlements. Furthermore, it amplifies the need to design for agency and growth, as seen in Zaatari. Multi-purpose spaces/structures that can be deployed and programmed how the residents see fit is crucial in a camp setting, as people come from different parts of the world with varying needs, talents, and endeavors. Multi-purpose spaces can address refugees' varying needs.

Refugees go through traumatic experiences from losing their homes, livelihoods, friends, relatives, and much more, requiring special attention to their physical, psychological, and social well-being. While they need various support systems to heal, architecture and design can start to aid in some of their physiological, psychological, and social needs. This thesis will address the social needs of the residents and utilize the spatial conditions for potential interventions.
Therefore, images of the street conditions and commercial corridor were analyzed to spatialize some of the concerns refugees were discussing in the interviews and potentially unravel how use patterns can inform potential interventions. The images in figures [5.19] through [5.30] on pages (94-95) show refugees standing, leaning, and sitting next to businesses and shelters in search of a shaded area. The images show refugees using textile, wood, and corrugated metal to create shading. These images reinforce the need for shaded areas, seating, and recreational spaces.

INCREASE SHADING
A primary design driver is to provide shading to enhance the outdoor experience of residents and provide protection from the sun. It is also intended to increase refugees' sense of dignity.

PROVIDE MULTI-PURPOSE SPACE
A second design driver is to provide multi-purpose spaces to allow residents agency over the spaces, so they are able to utilize the spaces based on their needs

IMPROVE THE SOCIAL FABRIC
A vital need of humans is the need to socialize and bond with others; providing the spaces to make that possible is another driver of this thesis.

Figure 5.17: Design Drivers

INTERVIEWS

"One thing about the [UNHCR] guidelines is that they do not take into account electricity and it is one of the first demands of refugees" - Hovig Etyemezian, the camp manager of Zaatari, (Chamma).

"[P]roblems are water, sewage and drainage... Lack of adequate planning and the haphazard development and evolution of the camp meant that installation of all these networks only happened in 2015/16, four years after the establishment of the 'temporary' camp" - Hovig Etyemezian, (Chamma).

"Two shoe shop owners, friends for decades before the war began, described their concerns with the living conditions in the camp and the difficulty finding dignified living space" - Chamma's account (Chamma).

"It is very difficult to live in the camp when only counting on the UNHCR vouchers...anyone able to find a job in the camp or open a successful shop/business may be able to afford to upgrade their shelter unit and improve living conditions, however many still have no job opportunities and thus are living with very basic supplies" - Al-Shahma, (Chamma).

"When asked about activities and leisure, most refugees said that there is no leisure at all; even the basic necessities which can provide leisure do not exist in the camp" - Chamma, (Chamma).

"How should I entertain my wife and kids? There's nothing in the camp such as gardens or formal open spaces where I can take my family" - Abu-Abdallah, (Chamma).

"We have nowhere to walk, sit or go in the camp" - Abu-Abdallah, (Chamma).

"There are only these community and youth centers which organizations are running that have children's playgrounds, but nothing for us as a family, or me as an adult" - Abu-Abdallah, (Chamma).

"Do you think I am happy living in a caravan? I cannot invest anything here and I feel it is more dignified for me to live outside the camp on my own in rural areas" - Abu-Abdallah, (Chamma).

"Even if we have aid and support from organizations, we still have a big lack of basic necessities which is causing frustrations and deprivations for us and for our children" - Abu-Abdallah, (Chamma).

"We stayed in a tent for over a year; living in a tent was bad because it cannot resist any natural conditions" - Al-Shahma, (Chamma).

"[I]n winter we had snow, most of tents were on the ground and flooded with water, and during summer there are sand storms. It usually gets very dusty, hot and humid for many hours, while the shelter units can barely protect us" - Al-Shahma, (Chamma).

"Camp planning does not respond to the harsh desert environment in which the camp is located, the wide horizontal and flat layout of the camp means shelter units receive the full impact of harsh natural conditions; the camp has barely any shade" - Chamma, (Chamma).

"The tents' fabrics and sandwich panels do not insulate the inner atmosphere/temperature [of shelters]" - Chamma, (Chamma).

"There is limited space inside shelter units" - Chamma, (Chamma).

"The shelter unit design does not consider key factors of the cultural background of the refugees, the factor of organic family growth and the need for privacy and personal space" - Chamma, (Chamma).

"Some refugees are still working illegally in Jordanian urban areas, accepting lower salaries than Jordanians, creating tension between the two nations because of competition over the available job opportunities" - Chamma, (Chamma).

"The lack of job opportunities for women in the camp is a major issue since families often lack male members, resulting in increased child labor" - Chamma, (Chamma).

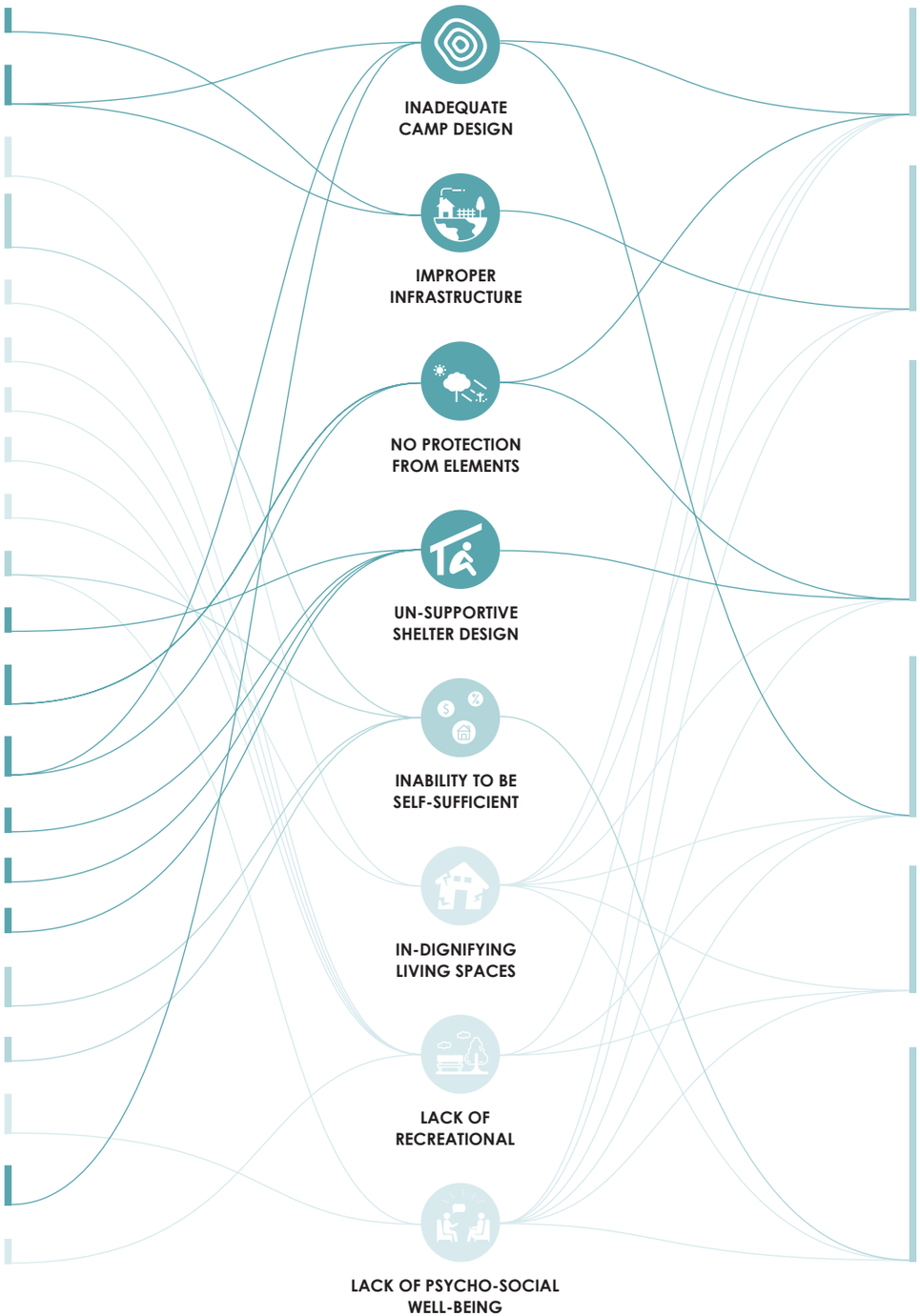
"Even though the space between shelter units is small, the space between blocks and sectors is massive, which creates physical spatial gaps that impede the development and growth of the social fabric of the camp"- Chamma, (Chamma).

"The roads and passageways between communities and shelter units are made from gravel and sand, thus they get muddy when it rains, which particularly affects children whenever they want to go or comeback from school, or if they want to play outside their shelter units" - Chamma, (Chamma).

"The camp still lacks trees, green spaces and recreational features and particularly public spaces for families and adults" - Chamma, (Chamma).

Figure 5.18: Interview Analysis, Quotes Derived from Nasr Chamma, 2018

CONCERNS



IMPLICATIONS

CONTEXTUAL MASTER PLAN

- A site with vegetation to act as natural protection from elements and providing structures for shading
- Designing sand resilient environment

INFRASTRUCTURE DEVELOPMENT

- Develop the electric grid to provide power throughout the day and prevent illegal and unsafe tapping into street light grid
- Redesign water, sewage and drainage network to connect to the shelters

SUPPORTIVE SHELTERS

- Increase shelter size to consider family size, privacy, and personal space
- Design context appropriate shelters to protect from elements (sand storms, extreme solar exposure, heat, rain and snow)
- Design transitional shelters to consider organic family growth
- Implement sustainable principles to increase self-sufficiency in the building
- Implement gardens and protective vegetation

SUPPORTIVE ROADS AND INTERSTITIAL SPACES

- Design paved child friendly routs
- Add walking and cycling lanes/trails
- Pave interstitial spaces to allow children comfortable playing spaces

RECREATIONAL FAMILY SPACES

- Add gardens/ formal open spaces
- Design shaded outdoor spaces for family gatherings
- Design outdoor private spaces for women

IMPROVED AND EXPAND COMMERCIAL CORRIDOR

- Redesign commercial spaces
- Add proper set-backs
- Add vegetation
- Improve lighting
- Add more commercial spaces

Figure 5.19: Privacy in Zaatari, Stefano Valentino, 2018

Figure 5.20: A Falling Canopy, Stefano Valentino, 2018

Figure 5.21: Men Leaning on a Building, Stefano Valentino, 2018

Figure 5.22: A Man Sitting on the Ground, Stefano Valentino, 2018

Figure 5.23: Men Chatting in the Shade, Stefano Valentino, 2018

Figure 5.24: A Man Resting Under a Canopy, Stefano Valentino, 2018

Figure 5.25: Two Men Chatting, Stefano Valentino, 2018

Figure 5.26: A Falling Business Sign, Stefano Valentino, 2018

Figure 5.27: Three Men Seeking Shade, Stefano Valentino, 2018

Figure 5.28: A Broken Swing, Stefano Valentino, 2018

Figure 5.29: Children Walking to/from School, Stefano Valentino, 2018

Figure 5.30: An Alleyway, Stefano Valentino, 2018

Figure 5.31: A Man Building Shading, Getty Images/Khalil Mazraawi, 2021

Figure 5.32: A Private Porch, Joi Lee, 2023

Figure 5.33: Women on a Picnic, Lee Matz, 2023

5.4 DESIGN PRECEDENTS

Design initiatives that have addressed some elements of livelihood, agency, dignity, and psycho-social well-being include the Green Refugee Camp initiative, the Maidan Tent, and Xafari Umbrella. The Green Refugee Camp aimed to address the need for supportive dwellings, deforestation concerns, and depleting resources. These challenges, while different from Zaatari, contribute to the level of livelihood of refugees, their sense of dignity, agency, and psycho-social well-being. Maidan tent addresses the need for shaded communal spaces, which are directly correlated with residents' sense of dignity and psycho-social well-being. XAFARI, on the other hand, is primarily concerned with protecting refugees from the sun and harvesting rainwater through a minimalist approach that can be easily implemented using minimal materials. Both projects have won shading competitions and serve as a great guiding tool for this research.

GREEN REFUGEE CAMPS, FIGURE [5.34]

This private-public partnership aimed to utilize the United Nation's sustainable development goals to improve the living conditions in the Minowa camp, reduce deforestation around the site, and become a best practice for the UNHCR (Tsimenis). The initiative helped build transitional shelters through refugee labor using local materials and planted 40,000 trees using Cocoon Technology. These interventions helped achieve five of the UN's sustainable development goals. They created 175 local jobs, saved 2.2 million liters of water, improved relationships between refugees and the host community through workshops, reduced water consumption, and many more. The intervention improved livelihood by developing supportive dwellings and providing access to employment. It addressed agency through residents' labor to build their own dwellings. It addresses dignity through self-supportive activities (building houses, planting trees, educating one another). Finally, it addresses the psycho-social well-being of refugees by improving the relationships between refugees and the host community and eliminating the need for women to walk far for water alone or at night. This initiative is great in achieving specific and measurable aspects of refugees' needs. The support and funding of the Dutch National Postcode Lottery, UNHCR, and Lutheran World Federation made this initiative possible.

MAIDAN TENT, FIGURE [5.35]

Bonaventura Visconti di Modrone and Leo Bettini Oberkalmsteiner, with the support of the UN International Organization for Migration, designed the Maidan Tent, which "will allow refugees to benefit from indoor public space – a communal area to counteract the psychological trauma induced by war, persecution, and forced migration" (Darijo) This mid-scale intervention addresses the lack of shading in refugee camps. It is designed to provide shading and a space to rest and socialize. Maidan is a great intervention as it responds to a basic need for protection from the elements and a space for leisure and rest, associated with dignity, a concept often completely missing in refugee camps. The Maidan Tent is designed for all climate zones and is flexible to host various activities. Moreover, it is designed to be easily transported and installed. The Maidan tent has received grants and has been constructed in another camp; it costs 50,000 dollars and is not scalable, making it challenging to implement in various locations. Therefore, it would not be appropriate in the context of Zaatari, where multiple scaler design concepts are necessary.

XAFARI, FIGURE [5.36]

2014's Future of Shade Competition winner, XAFARI, was designed to be assembled quickly and cheaply. It offers shade and rainwater harvesting, "the faceted fabric shelter is made of inverted, retractable "un-brellas" that channel water to low points in the canopy, where it is directed down through a bamboo or steel tube into a below-grade storage bottle, where it can then be stored and later pumped up for irrigation or daily use" (Architizer). This is also a great project that addresses shading and rainwater harvesting where it is applicable.

Figure 5.34: Refugees Planting Trees, Avier Bourgeois, 2023

GREEN REFUGEE CAMP OUTCOMES

ECONOMIC

175 JOBS
The shelters were built through the residents' efforts creating 175 jobs which contributes greatly to one's livelihood and sense of dignity.

2,160 TONS OF CASHEWS
40,000 trees were planted, which is predicted to produce 2,160 tons of cashews over 20 years.

SOCIAL

NEW SOCIAL BRIDGES
The initiative built new bridges between the host community and refugees through workshops.

IMPROVED MENTAL HEALTH
Improved refugees' mental health and well-being by greening the refugee camp.

ENVIRONMENTAL

REDUCED CARBON FOOTPRINT
Reduced the carbon footprint of UNHCR materials/operations and created carbon sequestration opportunities through tree planting.

ALTERNATIVE COOKING METHODS
The initiative helped save 2.2 million liters of water and helped refugees use briquettes instead of wood fuel to decrease deforestation.

Figure 5.35: The Maidan Tent, Delfino Sisto Legnani and Marco Cappelletti, 2023

MAIDAN TENT KEY FEATURES

MULTI-PURPOSE
The flexibility of the spatial organization has the quality to host a variety of different activities.

EASY TO INSTALL
The components are standardized to allow easy installation and to ensure long-term durability.

EASY TO TRANSPORT
All the applied materials have been carefully selected to ensure the easy transportability of the structure

FIRE RETARDANT
The aluminum structure is covered with a unique fireproof fabric that is resistant to water and strong wind.

FOR ALL CLIMATE ZONES
Due to its characteristic shape and thermic insulation, the tent resists all types of weather and climate conditions.

DISINFECT-ABLE
The use of a strong Pe + Pes cover textile allows the washing and disinfection of the tent.

Figure 5.36: The Xafari, Tony Leung, 2023

XAFARI KEY FEATURES

PROVIDES SHADING
Inverted retractable un-brellas are an easy and feasible solution that provides shading.

EASY TO INSTALL
The components are standardized to allow easy installation.

HARVESTS RAINWATER
It also channels water to a low point through a bamboo steel tube for storage.

FIRE RETARDANT
The aluminum structure is covered with a unique fireproof fabric that is resistant to water and strong wind.

6.0 PROPOSAL

This chapter will discuss the proposed framework and design interventions. Moreover, it will discuss the assembly of the design concept and its implementation, considering funding, shipment, assembly, deployment, and programming. The value of a framework and small-scale design strategies will be discussed in relation to existing architectural discourse.

6.1 FRAMEWORK

Based on the literature review, framing concepts, understanding of refugee needs, and Zaatari's spatial and social conditions, a framework consisting of the necessary structures, spaces, and programs required for livelihood, agency, dignity, and potentially psycho-social well-being was developed , seen in figure [6.1]. The framework includes design interventions that could be implemented at the camp, district, or unit scale. While this framework would require other stakeholders and financial supporters to fully execute, this thesis aims to prioritize the need for shaded resting and private areas, multi-purpose spaces, and green-ways/pocket parks that could be developed using modular structures. Furthermore, the aim is to develop a Do-It-Yourself (DIY) concept that would enable refugees to incrementally address their own needs and feel a sense of ownership over their spaces.

The following twelve elements are vital in increasing livelihood, sense of agency, dignity, and psycho-social well-being.

01 PAVED ROADS
The plan's first phase is to pave the sand roads to improve transportation routes in the camp, reduce sand issues, and improve the overall perception of the camp. The stakeholders required to make this initiative possible include the planning department, NGOs, urban planners, and residents' labor.

02 IMPROVED UTILITIES
Improving the utilities should happen concurrently with paving the roads to maximum construction efficiency and strengthen the camp infrastructure. Stakeholders include the planning department, civil engineers, urban planners, and residents' labor.

03 IMPROVED DWELLINGS
Expanding and improving the dwellings should take place after the roads and infrastructure are developed as the life span of the current units is coming to an end. The improvements, replacements, or expansions must consider the Syrians' cultural background and ensure ample privacy for women and flexibility for organic family growth. This physiological need must be prioritized and collaborated with architects, designers, and refugees (during the design and construction phase).

04 MULTI-PURPOSE SPACES
Phase two should focus on multi-purpose spaces designed to provide refugees agency over the program of the spaces. This is vital, as seen in Zaatari, where refugees utilized their own shelter to start businesses. These spaces can be designed based on current use patterns and coordinated with planners, designers, and refugees. They can include white box style spaces that can be modified however refugees need.

05 COMMUNITY ENGAGEMENT
Phases one and two require community engagement to foster agency and a sense of ownership among refugees and ensure that refugees are integrated with how their macro and micro environment is developed.

06 WALKING ROUTES
Walking routes should be developed incrementally and on a district basis. This could also take place during the first phase and be designed by landscape architects and urban planners.

07 CYCLING ROUTES
Cycling routes can be designed during the second phase as it is currently the primary means of transportation in the camp and can be enhanced to be safer, shaded, and more esthetically pleasing.

08 SHADED RESTING AREAS
Shaded resting areas should be developed to ensure the physiological needs of refugees are met and to provide spaces for leisure which are largely missing in the camp, hindering the social fabric. The initiative can involve architects, designers, NGOs, and refugees.

09 GREEN-WAY/ POCKET PARKS
The gaps in the camp can transform into green-ways and pocket parks to provide dedicated outdoor public spaces for the residents and increase psycho-social well-being. Landscape architects, planners, and refugees can be involved in this process.

10 STREET FURNITURE
This initiative is critical to improve the spatial conditions and perception of the camp and to hinder the formation of slum-like conditions in an effort to increase refugees' sense of dignity and psycho-social well-being. It can occur in phase three and involve urban planners, designers, and refugees.

11 MAKER SPACES
This asset can be implemented in each district to provide a space for refugees to be creative and improve their environment through community collaboration and DIY projects.

12 SOFTENING THE PERIMETER
The perimeter of the camp should be softened when the conflict is over to increase integration with the local community and increase refugees' freedom of movement to improve their sense of dignity.

These interventions are specific to Zaatari; they are not meant to be a universal guideline. Therefore, they must be modified based on their applied context and can be utilized for other refugee camps and informal settlements.

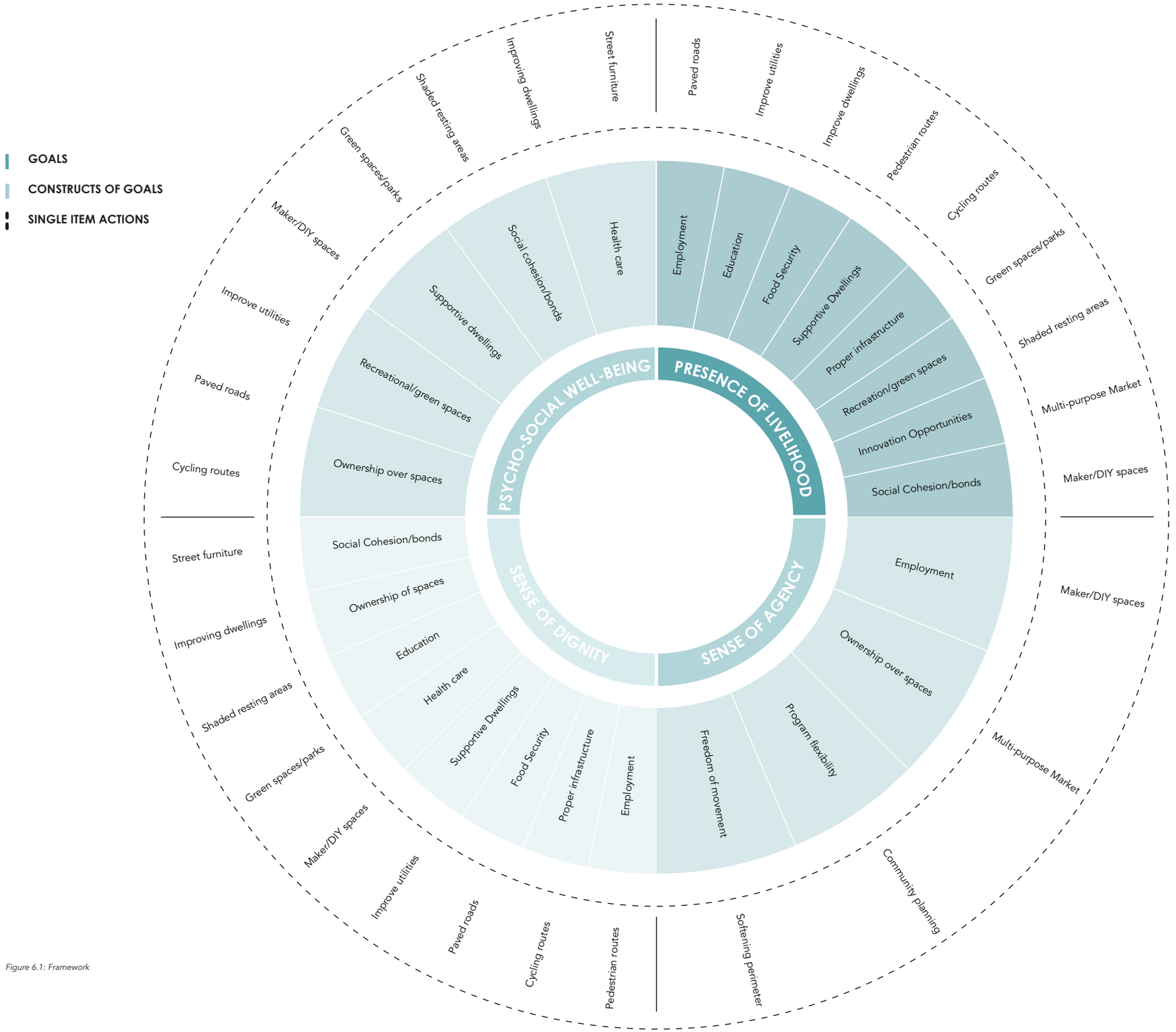


Figure 6.1: Framework

01 PAVED ROADS
The plan's first phase is to pave the sand roads to improve transportation routes in the camp, reduce sand issues, and improve the overall perception of the camp. The stakeholders required to make this initiative possible include the planning department, NGOs, urban planners, and residents' labor.

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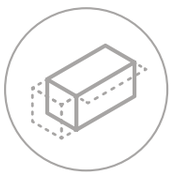

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04 MULTI-PURPOSE SPACES
Phase two should focus on multi-purpose spaces designed to provide refugees agency over the program of the spaces. This is vital, as seen in Zaatari, where refugees utilized their own shelter to start businesses. These spaces can be designed based on current use patterns and coordinated with planners, designers, and refugees. They can include white box style spaces that can be modified however refugees need.

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Phases one and two require community engagement to foster agency and a sense of ownership among refugees and ensure that refugees are integrated with how their macro and micro environment is developed.

06 WALKING ROUTES
Walking routes should be developed incrementally and on a district basis. This could also take place during the first phase and be designed by landscape architects and urban planners.

Figure 6.2: Framework Details

07 CYCLING ROUTES
Cycling routes can be designed during the second phase as it is currently the primary means of transportation in the camp and can be enhanced to be safer, shaded, and more esthetically pleasing.

08 SHADED RESTING AREAS
Shaded resting areas should be developed to ensure the physiological needs of refugees are met and to provide spaces for leisure which are largely missing in the camp, hindering the social fabric. The initiative can involve architects, designers, NGOs, and refugees.

09 GREEN-WAY/ POCKET PARKS
The gaps in the camp can transform into green-ways and pocket parks to provide dedicated outdoor public spaces for the residents and increase psycho-social well-being. Landscape architects, planners, and refugees can be involved in this process.

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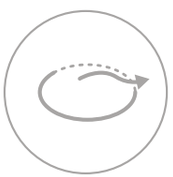


12 SOFTENING THE PERIMETER
The perimeter of the camp should be softened when the conflict is over to increase integration with the local community and increase refugees' freedom of movement to improve their sense of dignity.

6.2 DESIGN INTERVENTIONS

As mentioned previously, the conditions in Zaatari require large-scale interdisciplinary interventions that address master planning, infrastructure, housing, and landscape issues. Therefore, this thesis develops a framework that considers these large-scale concerns in an effort to guide future plans and interventions that may occur in Zaatari. However, this thesis also tests some small-scale design concepts to address other shortcomings of the camp, like shading, resting areas, and communal and multi-purpose spaces that can be more easily achieved through grants and refugee efforts. As a result, multiple modular design concepts have been developed that refugees can assemble, deploy, and program. Figures [6.3] through [6.7] will showcase the iterations and the assembly process.

It is important to mention that these design concepts are informed by the current efforts of refugees in Zaatari to create extensions, courtyards, and shaded areas. The design is also sensitive to the materials used on site, including wood, corrugated metal sheets, steel pipes, and textile. These elements have informed the following design concepts.

1.A FREE STANDING TEXTILE & WOOD,
The concept utilizes wood for the structure, and textile is used for the paneling, which can also be other available materials such as wood or corrugated metal sheets. This is an option to re-purpose textiles. The structure is modular and can be used for shading, privacy, and other programs. Figure [6.3].

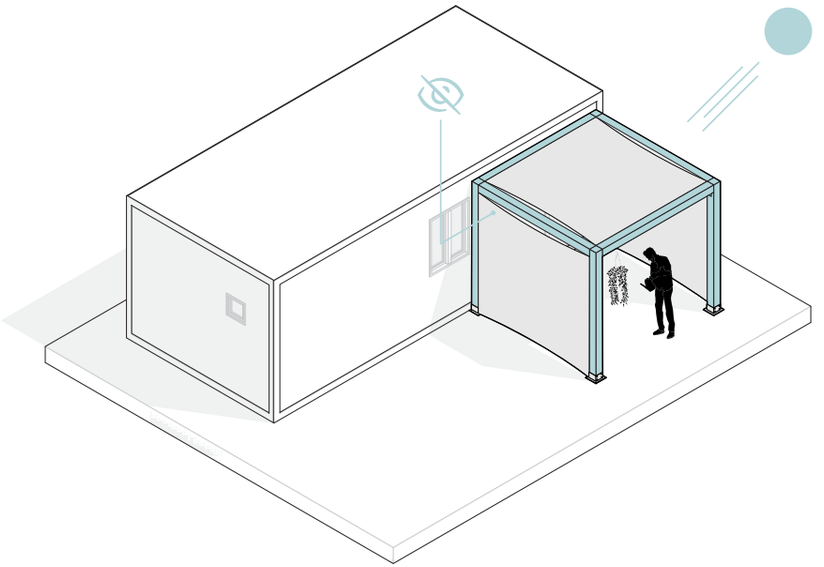
1. B FREE STANDING TEXTILE & WOOD
This iteration has been expanded to two modules of the same structure and used to create completely enclosed spaces and semi-enclosed spaces. Figure [6.4].

1.C FREE STANDING TEXTILE & WOOD
The free-standing module can be used in public areas to create public spaces and introduce new programs such as market stalls, community spaces, resting areas, etc. Figure [6.5].

2.A ATTACHED TEXTILE & WOOD
The attached concept utilizes wood for the structure, and textile is also used for the paneling. This concept can be attached to a building, reducing costs and creating a more fixed structure. It provides shading and privacy. Figure [6.6].

2.B ATTACHED TEXTILE & WOOD
This second iteration again uses two modules attached to the building. The modular structure could be completely enclosed or open based on the needs of the residents. Figure [6.7].

These concepts show iterations that primarily utilize textiles; however, all the structures are designed to be structurally sound and hold corrugated metal paneling, wood paneling, or other heavier materials. One of the design criteria for these structures is for them to be structurally sound to ensure the safety of refugees (which is lacking in the current shading structure in Zaatari) and to allow the structure to be utilized for suspending elements, such as plants, home goods or potentially swings increasing the flexibility and agency refugee have over how the structure is used.



1.A FREE STANDING TEXTILE & WOOD
The concept utilizes wood for the structure, and textile is used for the paneling, which can also be other available materials such as wood or corrugated metal sheets. This is an option to re-purpose textiles. The structure is modular and can be used for shading, privacy, and other programs.

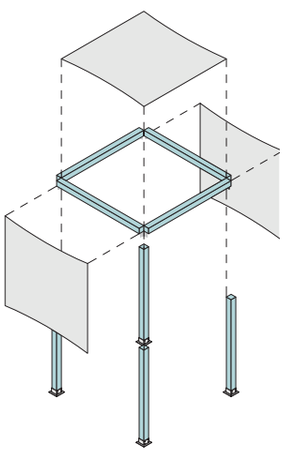
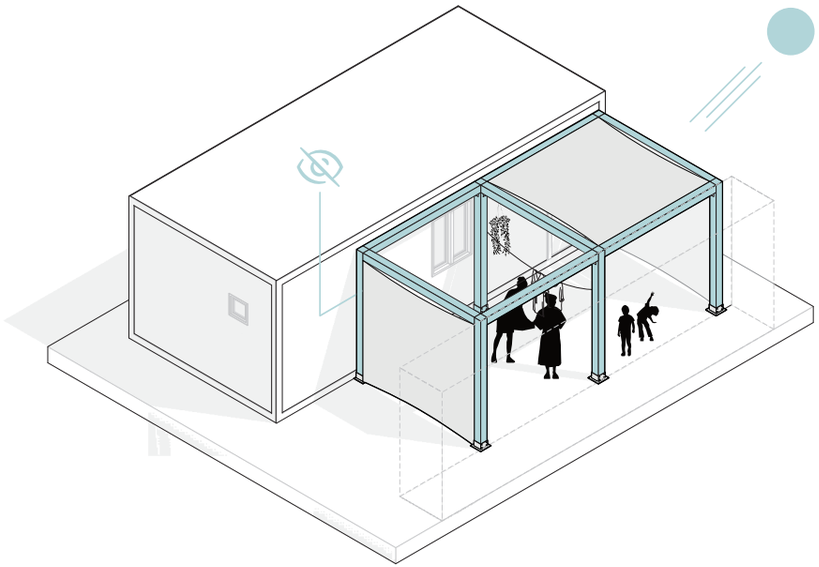


Figure 6.3: 1.A Free Standing Textile and Wood Structure



1. B FREE STANDING TEXTILE & WOOD
This iteration has been expanded to two modules of the same structure and used to create completely enclosed spaces and semi-enclosed spaces.

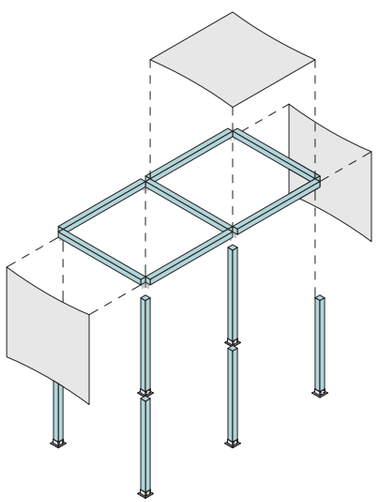
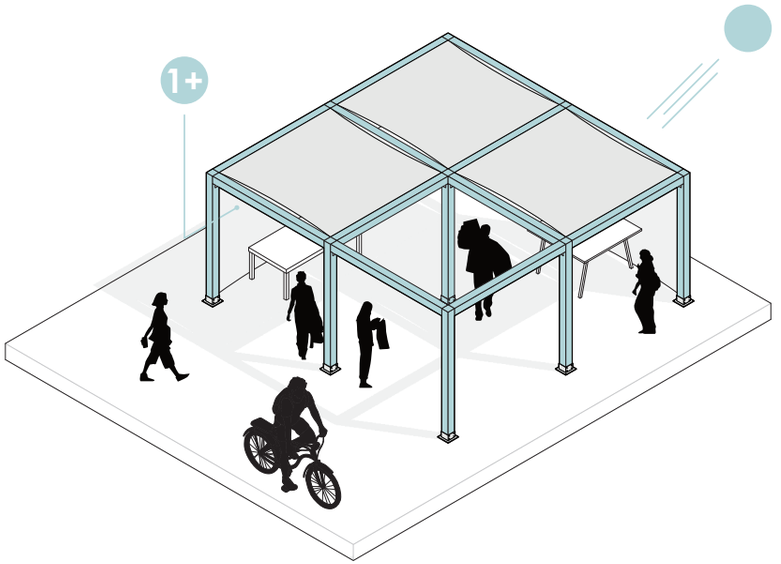


Figure 6.4: 1.B Free Standing Textile and Wood Structure



1.C FREE STANDING TEXTILE & WOOD
The free-standing module can be used in public areas to create public spaces and introduce new programs such as market stalls, community spaces, resting areas, etc.

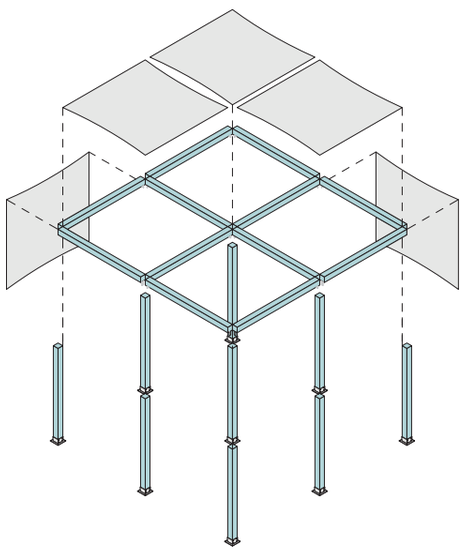
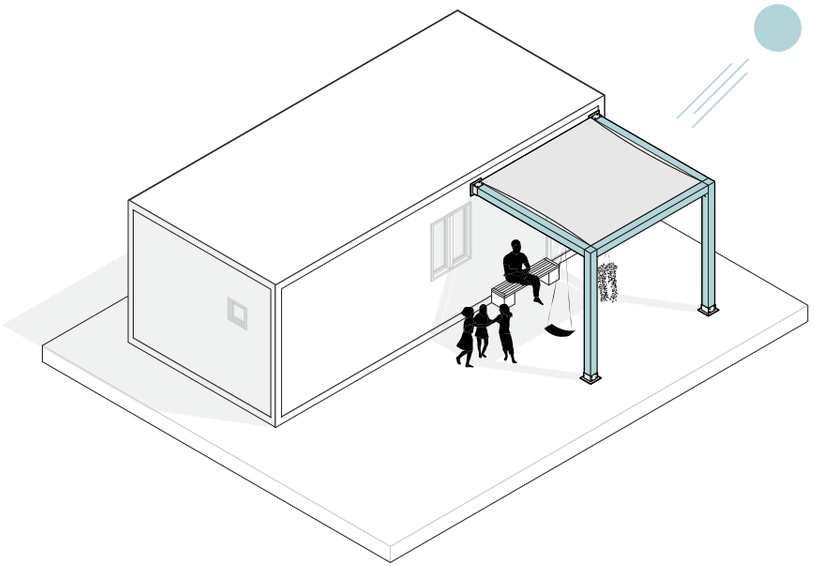


Figure 6.5: 1.C Free Standing Textile and Wood Structure



2.A ATTACHED TEXTILE & WOOD
The attached concept utilizes wood for the structure, and textile is also used for the paneling. This concept can be attached to a building, reducing costs and creating a more fixed structure. It provides shading and privacy.

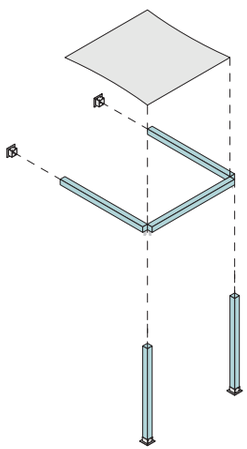
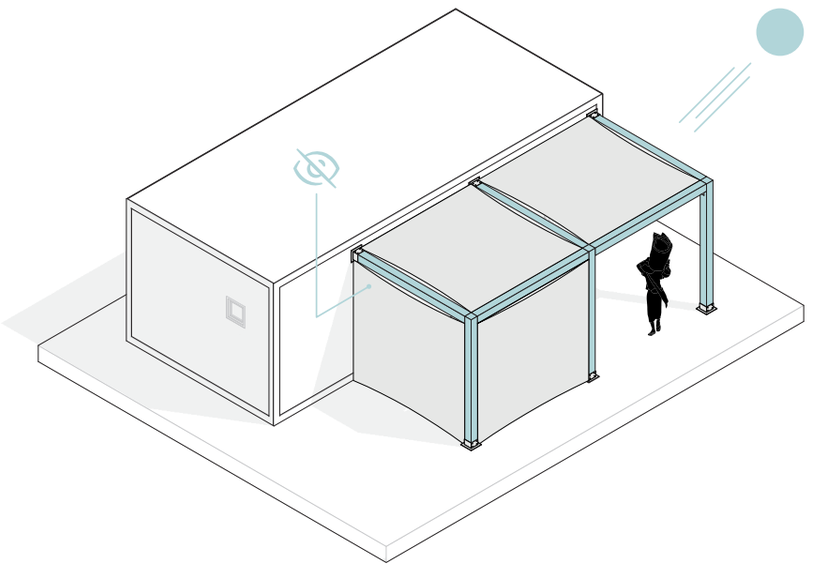


Figure 6.6: 2.A Attached Textile and Wood Structure



2.B ATTACHED TEXTILE & WOOD
This second iteration again uses two modules attached to the building. The modular structure could be completely enclosed or open based on the needs of the residents.

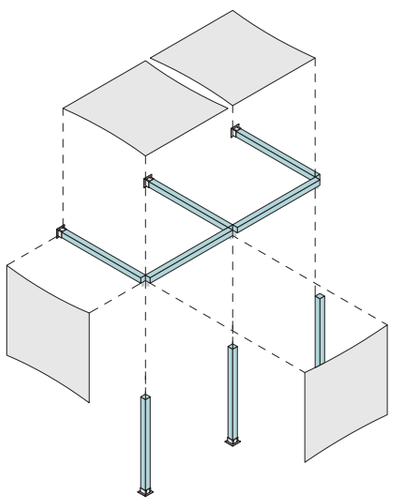


Figure 6.7: 2.B Attached Textile and Wood Structure

6.3 IMPLEMENTATION

This initiative is intended to be an effort of NGOs and the UNHCR. If funding is attainable, the goal is for the UNHCR to order the materials and assembly instructions for refugees. While the goal is to provide the materials and connections necessary for the structure to be built, it might not always be financially feasible; therefore, the UNHCR can order and provide the connections or joints to the refugees, which then can be utilized for constructing the structure they need. Currently, the refugees are using ropes and other structurally fragile connections seen in figure [5.31]; therefore, the least that can be provided are the connections to ensure the stability and functionality of the structures built in the camp.

Five steps must be followed to implement these design-based solutions for shading, resting, and multi-purpose space needs.

01 NEED ASSESSMENT
Need assessment must be conducted in the camp through interviews, mapping, and on-site living conditions analysis to assess the need for this initiative.

02 GRANT APPLICATION
NGOs and the UNHCR can then apply for grants and raise money to purchase the materials and assembly instructions.

03 COORDINATION
NGOs, UNHCR staff, and volunteers can coordinate the ordering, shipment, and storage of materials in the distribution center and vacant building in Zaatari that are currently underutilized.

04 DISTRIBUTION
When the materials arrive in the camp, they can be distributed and or sold based on the financial situation and needs of the residents. If the structures are intended for public use, they can be donated to the residents or purchased collectively, depending on their financial situation.

05 ASSEMBLY
When the materials and assembly kit are distributed, refugees can assemble, deploy, and program them based on their needs. If they are utilized in public spaces, the instructions will include key areas where the structures can be most valuable based on the initial assessment and use patterns in the camp.

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Figure 6.8: Implementation Plan

6.4 APPLICATION

If the implementation is successful, the refugees can be given various areas that currently need intervention based on the thorough analysis of the camp. The following section will showcase potential areas where the modules can be deployed. It is important to emphasize that these are mere suggestions based on the research; the refugees ultimately decide where the structures should be deployed and how they should be programmed. Four major conditions were identified in chapter five, which are utilized to test how the modules can be implemented in the conditions while addressing specific refugee needs.

1. The gaps between neighbors can become private interstitial spaces.
2. Vacancies can transform into pocket parks that utilize the structures as resting and socializing areas.
3. Gaps between businesses can become shaded resting areas or extensions to existing businesses.
4. Finally, the larger gaps between blocks caused by the dismantling and privatization of communal spaces can become, green-ways or market areas.

The following section will elaborate on the interventions and their impact on refugees. The illustrations are shown on page 125 and enlarged on pages (126-135).

PRIVATE INTERSTITIAL SPACES

These structures, seen in figure [6.9] are inspired by refugees' existing methods to create shading and privacy. They could be built in various ways. They can be expanded, reassembled, and reconfigured. This intervention can allow the residents to be agents over how the structure is built and used while providing them with shading and privacy.

POCKET PARKS

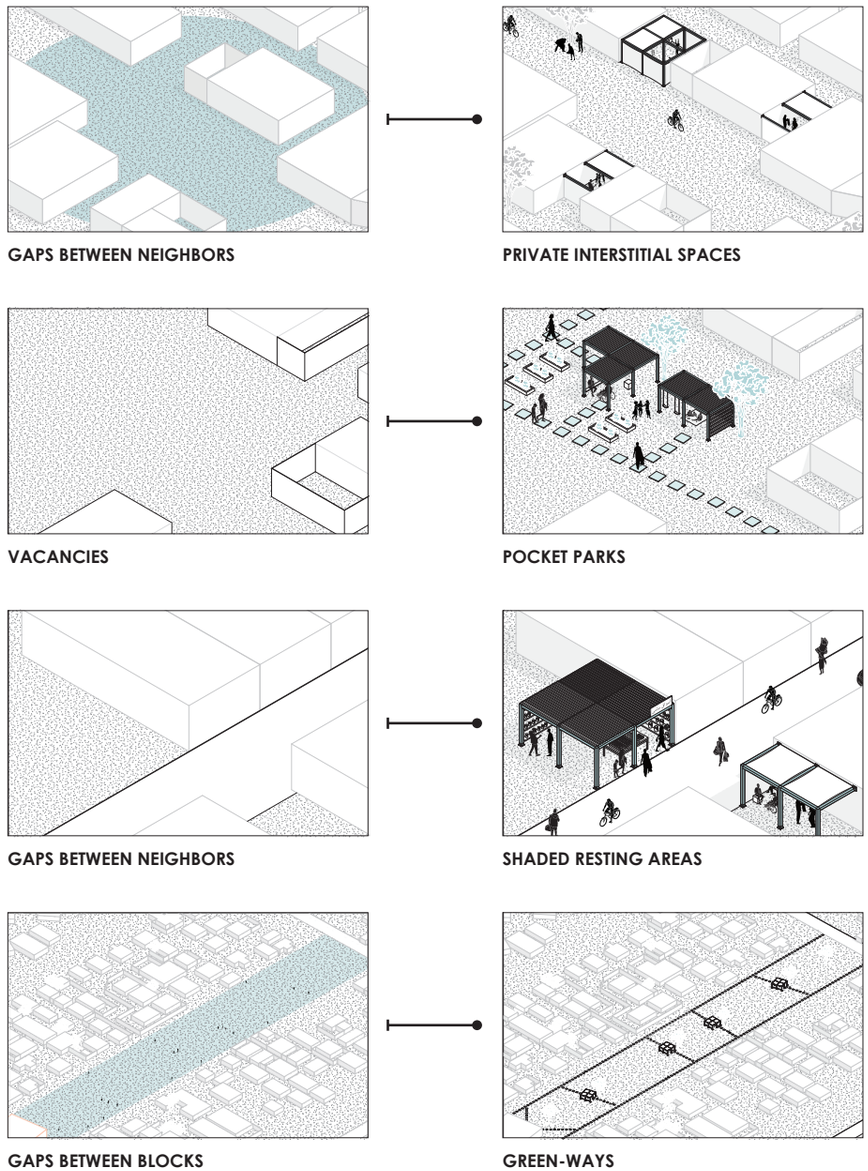
The vacancies resulting from movement in the camp can be transformed into pocket parks, as seen in figure [6.10], which can serve elders, women, and children. These can be designed to cater to the specific needs of the surrounding neighbors. For instance, it could have more screening if it is designed for women. This can improve refugees' psycho-social well-being by providing a space for them to rest, socialize and have fun.

SHADED RESTING AREAS

As mentioned previously and shown in the images on pages (94-95), street design and furniture that provide resting and seating areas are missing in Zaatari's streets and commercial corridors. Therefore, refugees could build structures to provide more seating and shading, as seen in figure [6.11]. It could also be utilized as an extension to the existing businesses.

GREEN-WAYS

Large gaps between blocks could become green-ways for walking and cycling, as seen in figure [6.12]. They can serve as socializing areas. Many refugees have complained about these large gaps and the lack of walking and seating areas. Therefore, these gaps can be great opportunities to activate the spaces and better serve the refugees, potentially improving their psycho-social well-being.



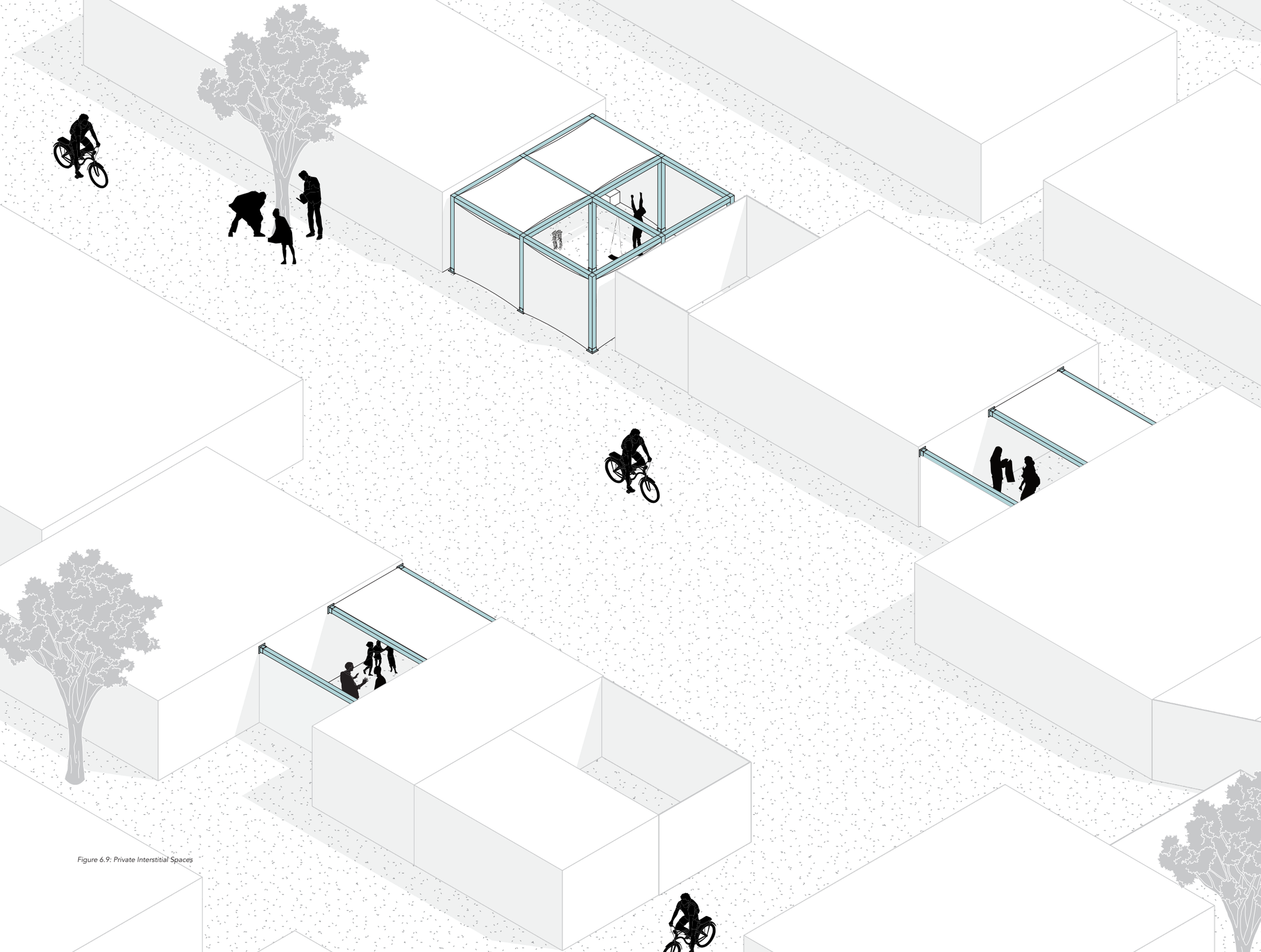


Figure 6.9: Private Interstitial Spaces

Figure 6.10: Pocket Park

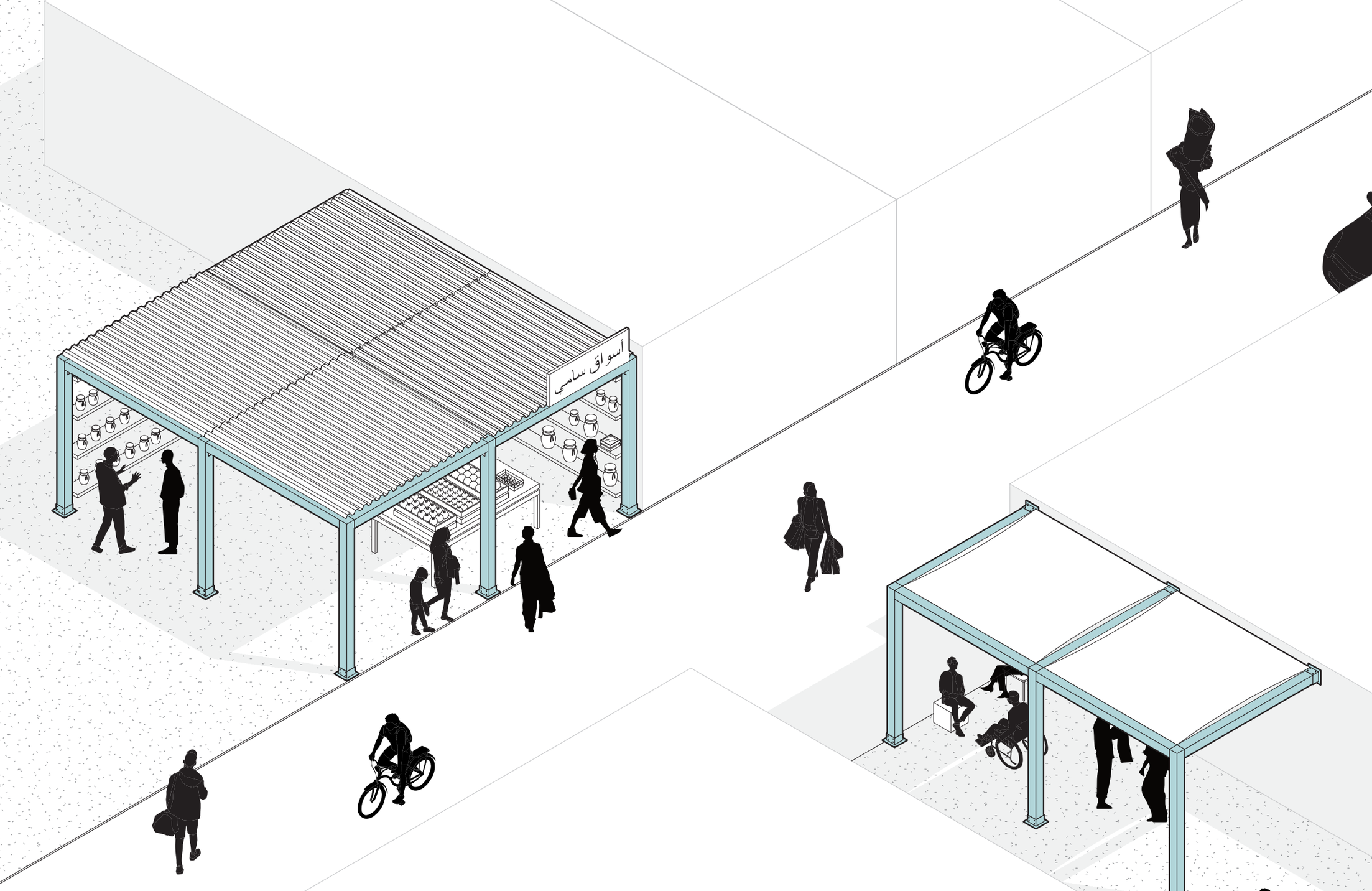


Figure 6.11: Shaded Resting Areas

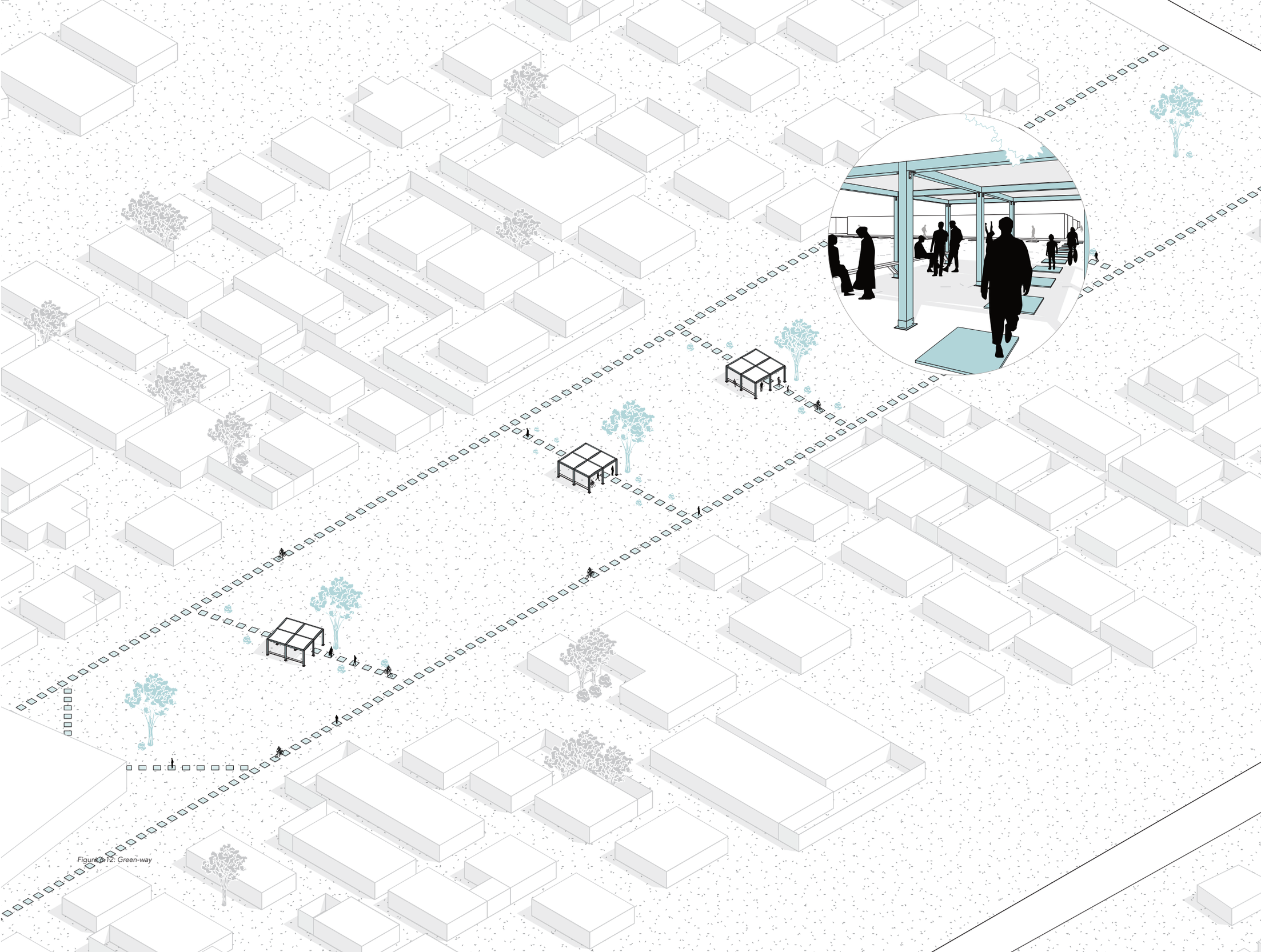


Figure 6.12: Green-way

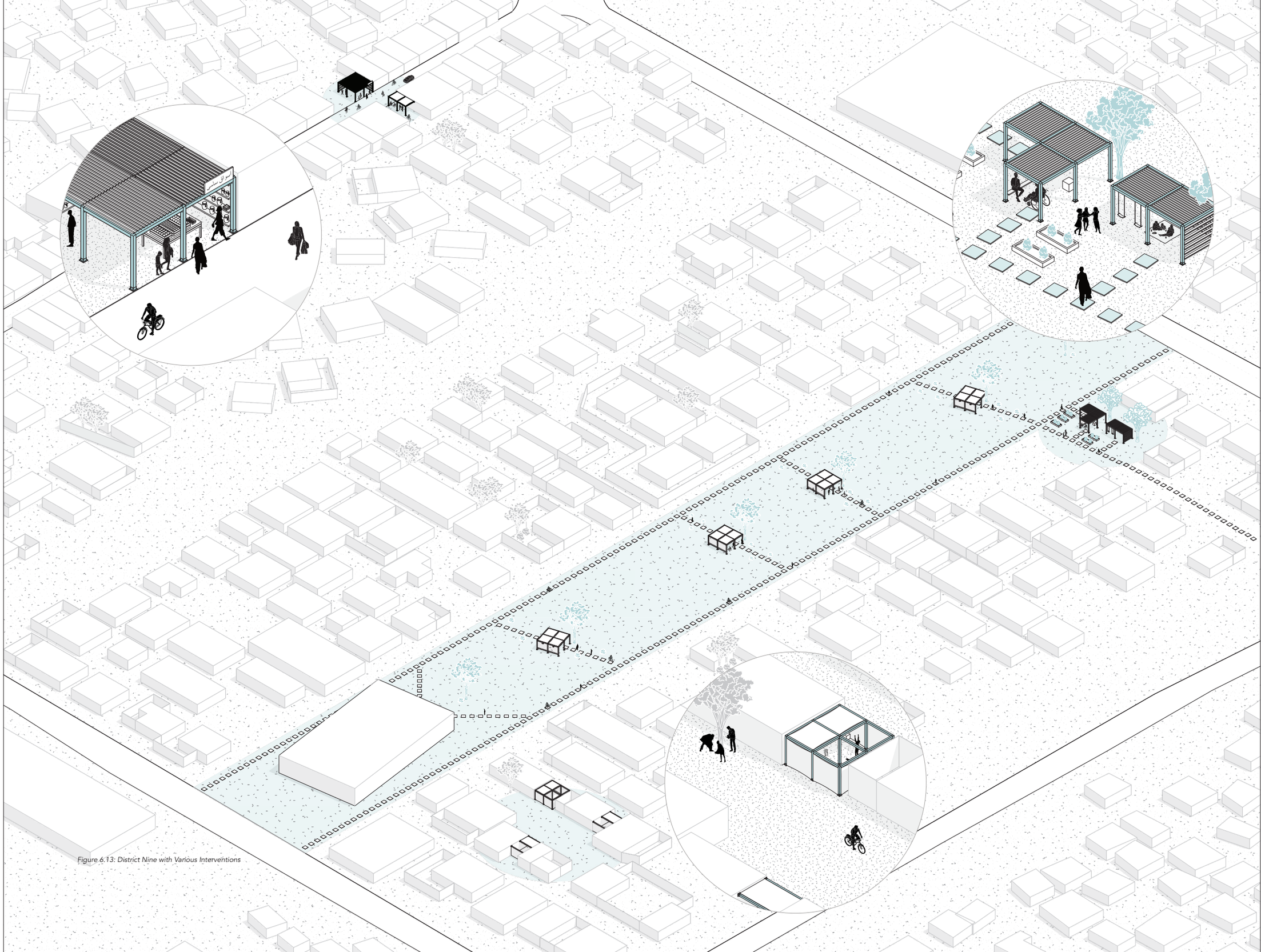


Figure 6.13: District Nine with Various Interventions

6.5 CONCLUSION

This thesis explores questions concerned with designing interventions that foster agency and improve livelihood, dignity, and psycho-social well-being. However, the research revealed the various limitations involved in addressing these concepts in the camp. Furthermore, it became clear that it is impossible to achieve these goals without interdisciplinary interventions, policy reform, investors, and many other stakeholders. The thesis acknowledges the need for better guidelines to improve camp conditions; therefore, it proposes a framework that is rooted in the research conducted in Zaatari, Azraq, and Oncupinar. The proposal takes into consideration the findings that emerged from the mapping exercises, interviews, UNHCR reports, and image analysis to develop guidelines that address the current spatial, social, and economic conditions. Moreover, it develops design strategies focusing on refugees' physiological and psycho-social needs. The simple assemble-able and programmable element of the proposed modular structures can foster and increase the existing agency of the residents in Zaatari and potentially increase the sense of ownership and dignity. The proposal applies a bottom-up approach to the structures' assembly, deployment, and programming to ensure residents utilize them based on their needs.

This thesis does not suggest that modular structures will fully address refugees' needs for shading, privacy, and multi-purpose space, etc. It realized the value of small-scale, feasible interventions that can start to address these needs while acknowledging that larger-scale interventions must be employed to address the full spectrum of refugees' physiological, financial, and psycho-social needs. However, it is pivotal for architects and designers to acknowledge large-scale interventions' social, political, and financial limitations and propose more implementable solutions rooted in specific needs and user agency

APPENDIX A - RESEARCH MAKING

Research-making assignment required researching specific aspects of the thesis topics through making. Therefore, a physical model was created of the Zaatari site and context along with layered maps of Zaatari in 2013 and in 2021. The layered maps aimed to help us understand what programs and "amenities" are in the camp, how the residents live in relationship to all these, and how it has evolved. The processes consisted of creating separate layers of "maps" of the shelters, roads, clinics, etc., to understand the relationships in an additive approach. This exercise helped us understand how the camp is denser on the northwest side, where the area is like a commercial corridor, and less dense on the east side of the camp. This exercise continued to develop to look at the camp's evolution and shift over time to help determine what areas were growing and what areas need to be addressed to improve livelihood.

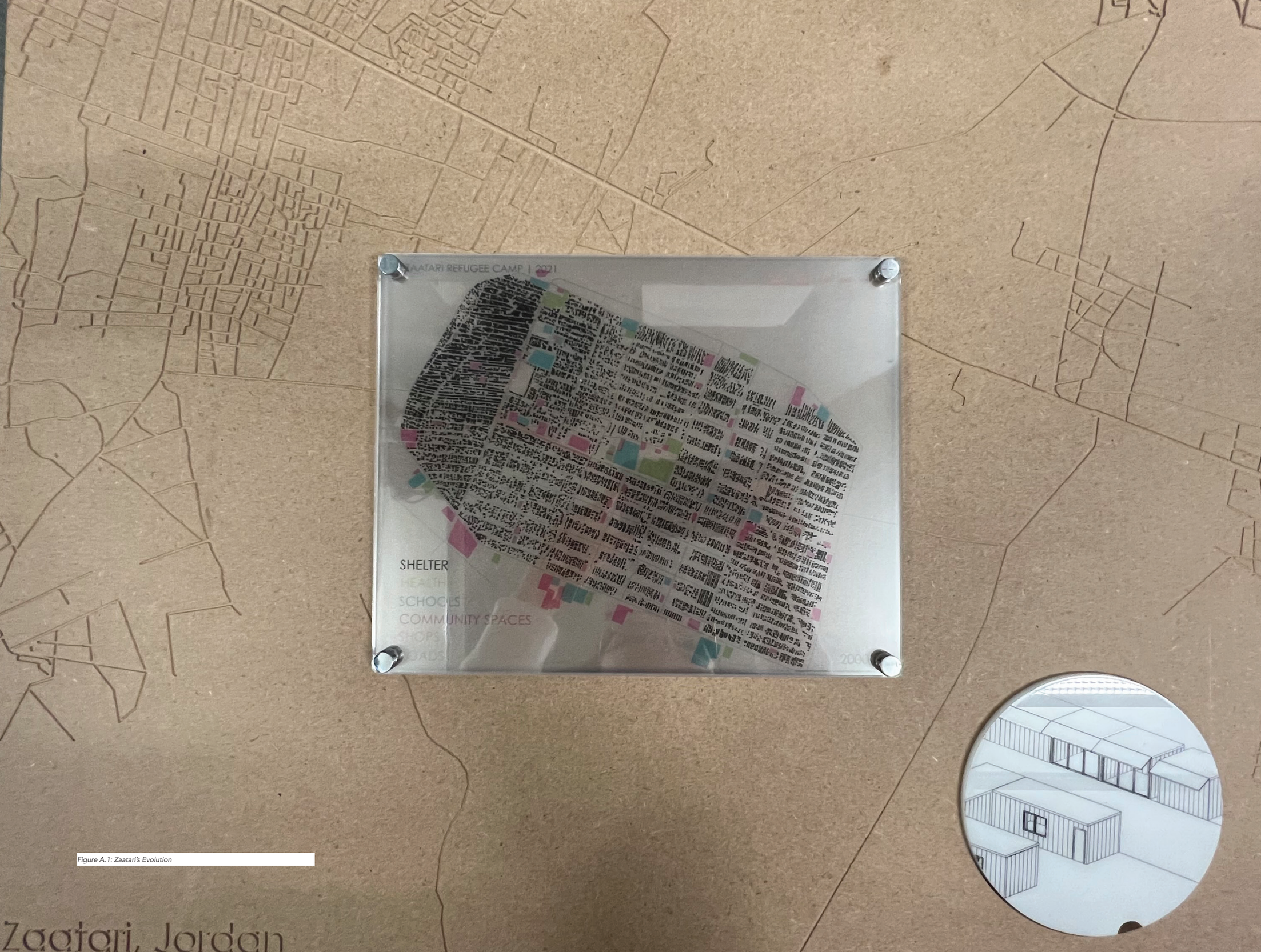


Figure A.1: Zaatari's Evolution

APPENDIX B - SKETCH PROBLEM

Sketch problem was an exercise that aimed to study a specific topic about the thesis. The primary question studied during this exercise is how do refugees experience and exercise spatial, social, and economic agency in the Zaatari refugee camp. Camps are known to be spaces of control and containment where refugees have no power over the planning and design of the camp. Furthermore, the United Nations High Commissioner for Refugees (UNHCR) guidelines utilized to design and manage camps tend to create a dependency model of living in the camp. Residents are not allowed to work, needing to live on vouchers and external support. However, refugees, like the rest of us, also want to work, be free, have power over their lives, and work toward productive endeavors. Zaatari experienced a large influx of refugees in 2012, making it much harder to manage and control. This exercise clarified that the UNHCR guidelines intended to be used did not work well as they did not comply with Syrian's religious values and culture. Soon after the camp opened with a grid layout, it was dismantled and reassembled. Residents moved their units closer to services and neighbors. The camp took a life of its own. Many shops, schools, restaurants, and community spaces opened in Zaatari, turning it into more of an informal city while lacking basic amenities and infrastructure. The images on the following page will show the changes over time and a few suggestions for how it could look. However, the exercise proved unsuccessful as it was not contextual.

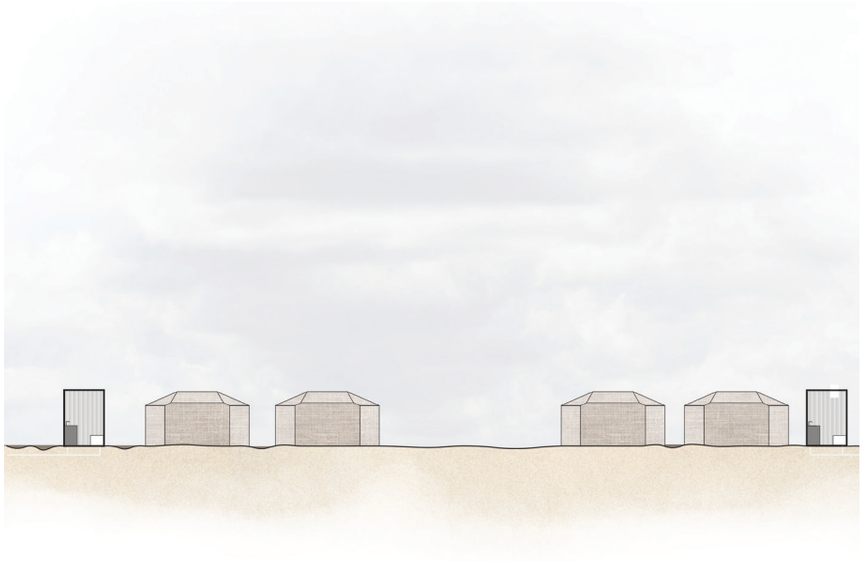


Figure B.1: Zaatari's Spatial Condition in 2012

Figure B.2: Zaatari's Spatial Condition in 2013

Figure B.3: Zaatari's Spatial Condition in 2014

Figure B.4: Zaatari's Future Vision

Figure B.5: Zaatari's Future Vision 2

APPENDIX C - STREET CONDITION

Visual ethnography was utilized to understand the street conditions and user patterns and further analyze the economic agency experienced in Zaatari. This exercise was successful in clarifying the types of business and skills present in the camp and the way refugees utilize spaces for their business. This exercise also revealed gaps between business and lack of space in the prefabricated units for everything the residents were selling. Overall, it was a successful exercise that inform the over direction of the thesis and proposal.

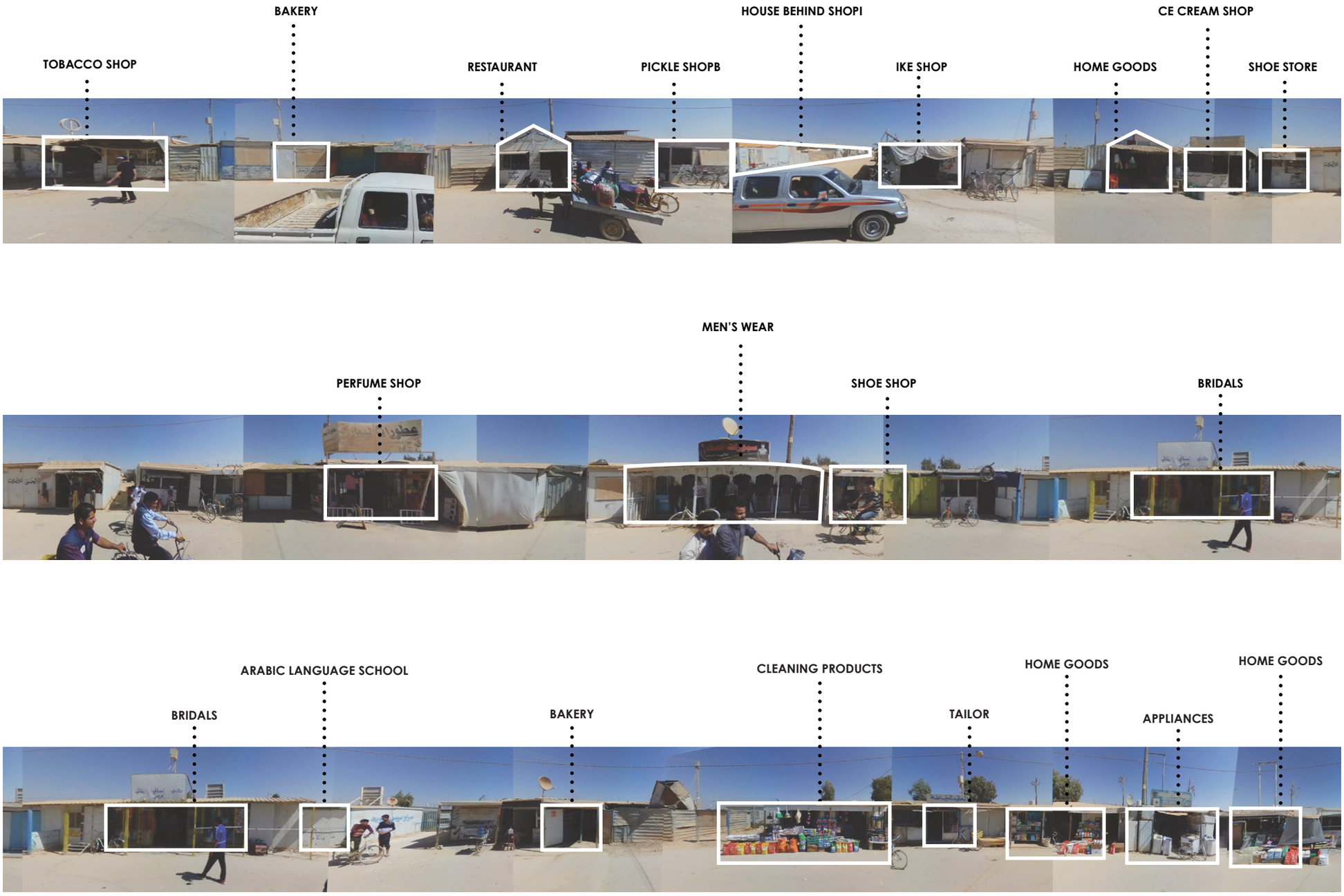


Figure C.1: Street Stitch of the Al Souq Street in Zaatari (complete), Images Derived from Google Maps, 2018

APPENDIX D - DESIGN ITERATIONS

Prior to the “final” proposal, various other iterations were created to test design concepts in Zaatari that consider shading, leisure, and the exchange of goods and services. Furthermore, concepts of Syrian architecture were also tested to create spaces that resembled the refugees’ previous environment. However, they revealed the challenge of implementing the design due to the elaborate nature of the structure, making it less feasible. This exercise led to the development of a simplified design concept that residents and the UNHCR can more easily fund, implement, and assemble.

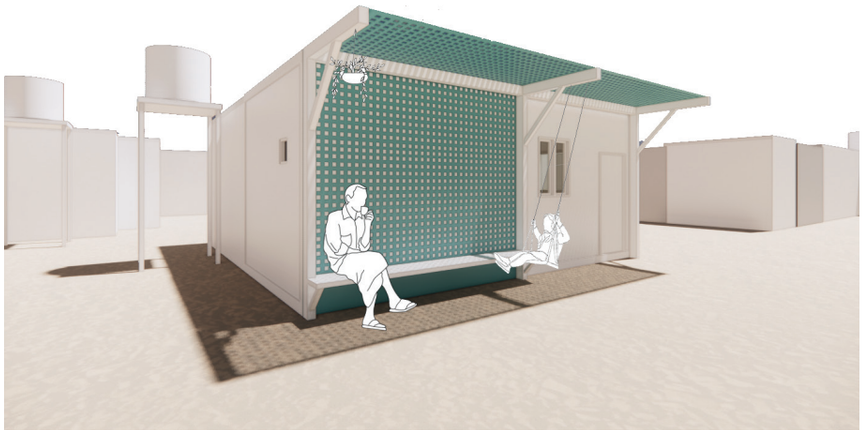


Figure D.1: Shading Structure Design Concept 1.A

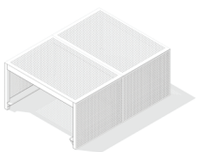


Figure D.2: Shading Structure Design Concept 1.B

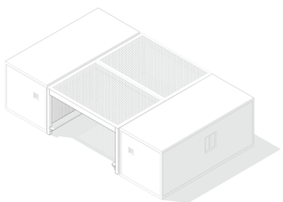


Figure D.3: Shading Structure Design Concept 1.C

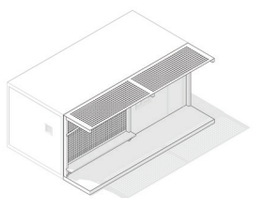


Figure D.4: Shading Structure Design Concept 1.D

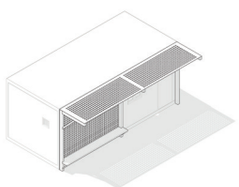


Figure D.5: Shading Structure Design Concept 1.E

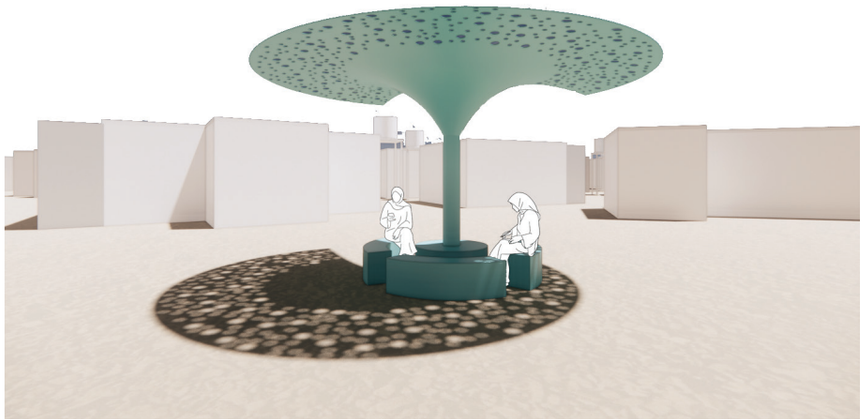


Figure D.6: Shading Structure Design Concept 2.A

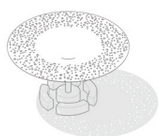


Figure D.7: Shading Structure Design Concept 2.B

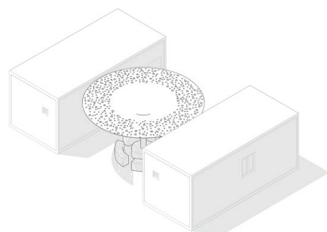


Figure D.8: Shading Structure Design Concept 2.C

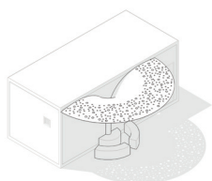


Figure D.9: Shading Structure Design Concept 2.D

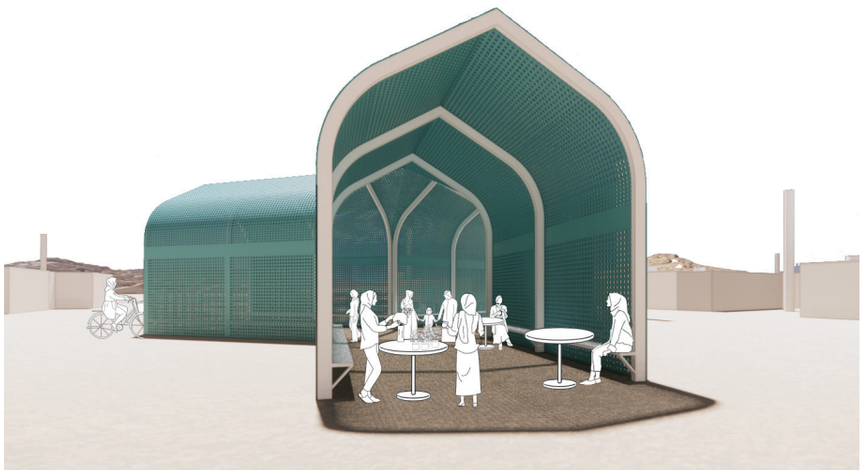


Figure D.10: Shading Structure Design Concept 3.A

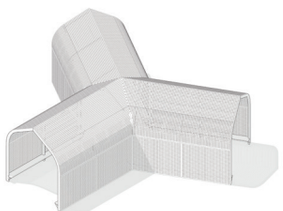


Figure D.11: Shading Structure Design Concept 3.B

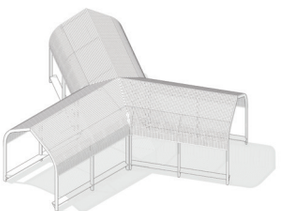


Figure D.12: Shading Structure Design Concept 3.C

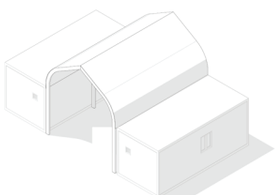


Figure D.13: Shading Structure Design Concept 3.D

LIST OF FIGURES

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LIST OF ABBREVIATIONS

IDP: Internally Displaced People
UN: United Nations
UNHCR: United Nations High Commissioner for Refugees
UNRRA: United Nations Relief and Rehabilitation Administration
UNICEF: United Nations International Children's Emergency Fund
WFP: World Food Program
SRAD: Syrian Refugee Affairs Directors
MoE: Ministry of Education
NGO: Non-Governmental Organizations
JICA: Japan international cooperation Agency
DIY: Do-It-Yourself