Refugee Camps: Considerations for Temporary Shelter Design and Organization

Sanaz Dehghani Payan

Submitted to the
Institute of Graduate Studies and Research
in partial fulfillment of the requirements for the degree of

Master of Science
in
Architecture

Eastern Mediterranean University
January 2017
Gazimağusa, North Cyprus

Approval of the Institute of Graduate Studies and Research

Prof. Dr. Mustafa Tümer
Director

I certify that this thesis satisfies the requirements as a thesis for the degree of Master of Science in Architecture.

Prof. Dr. Naciye Doratlı
Chair, Department of Architecture

We certify that we have read this thesis and that in our opinion it is fully adequate in scope and quality as a thesis for the degree of Master of Science in Architecture.

Assist. Prof. Dr. Guita Farivarsadri
Supervisor

Examining Committee

1. Assoc, Prof. Dr. Maya N. Öztürk

2. Asst. Prof. Dr. Guita Farivarsadri

3. Asst. Prof. Dr. Pınar Uluçay

ABSTRACT

In recent years, a lot of wars and conflicts have occurred around the world for different reasons such as political, economic, ethnic, etc. These wars and conflicts have resulted in a significant increase in the number of refugees around the world.

According to UNHCR (United Nations High Commissioner for Refugees) today, there are approximately 62 million people in the world who had to leave their homes and countries due to wars and move to places that they believe would be safer. Out of this number 21.3 million are refugees. Most of these refugees live in refugee camps set in various countries all around the world. Some of these camps are like small cities with up to 250000 population. However, many of these camps and provided shelters have a range of serious problems, and provide refugees with very poor living conditions.

Considering the fact that most of these refugees live in these camps for over five years, and some for over a generation, it becomes essential to think about the design of these camps in a different way than other disaster ones that the duration of stay is generally shorter. Besides, what should be considered is the fact that these people have had the traumatic experience of a war, and are far from their motherlands, trying to start a new life in a foreign place. That's why providing refugees with proper shelters can increase the sense of belonging and meet the need for a "home" to some extent. Another critical but less discussed issue in this condition is the overall organization of refugee camps, and possible social and psychological effects of these organizations on refugees.

In this respect, the aim of this study will be to argue about the quality of life in refugee camps with an emphasis on the organization of shelters in camps to provide a safe

environment which increases the quality of human interactions, hence the well-being of the refugees. As the case study of this research some refugee camps in Turkey are chosen, to study the quality of shelters, exterior spaces and overall organization of the camps. As the result of this study some suggestions are developed for enhancing the quality of public spaces in these kinds of camps.

Keyword: Shelter, Refugee Camps, Spatial Organization, Quality of Social Spaces.

ÖZ

Son zamanlarda dünya çapında siyasi, ekonomik, etnik, vb. nedenlerle birçok savaş ve çatışma yaşanmaktadır. Bu çatışmalar ve savaşlar, dünyada mülteci sayısında büyük bir artış yaşanmasına neden olmuştur.

Birleşik Milletler Mülteciler Yüksek Komisyonu'na (UNCHR) göre, günümüzde tüm dünyada evlerini ve ülkelerini terk ederek daha güvenli olduğunu inandıkları yerlere giden yaklaşık 62 milyon kişi yaşamaktadır. Bu sayının 21,3 milyonunu mülteciler oluşturmaktadır. Bu mültecilerin çoğu dünyanın farklı yerlerinde kurulan mülteci kamplarında yaşamaktadırlar. Bu kampların bazıları 250,000'e ulaşabilen nüfusları ile küçük birer şehir gibidirler. Ancak, bu kampların ve sunulan barınakların genellikle çok ciddi sorunları vardır ve mültecilere çok düşük standartlarda bir yaşam sunarlar.

Bu mültecilerin çoğu bu kamplarda beş yıldan fazla, hatta bazen bir nesilden fazla yaşarlar. Bu nedenle de bu kampların tasarımının, diğer daha kısa süreli kalmaya uygun olan ve afetlerde kurulan kamplardan farklı olarak düşünülmesi gerekmektedir. Ayrıca, bu insanların travma dolu bir savaş deneyimi yaşadıkları ve vatanlarından uzakta, yabancı bir yerde bir yaşam kurmaya çalıştıkları gerçeği de göz önünde bulundurulmalıdır.

Mültecilere uygun barınaklar sunmak, onların bir yere ait olma ve bir "eve" sahip olma gereksinimin belli ölçüde giderilmesine yardımcı olabilir. Bu durumda, bir diğer kritik ama daha az tartışılmış konu da mülteci kamplarının genel organizasyonu ve bu düzenin mültecilerde bırakabileceği sosyal ve psikolojik etkilerdir.

Bu bağlamda bu araştırmanın amacı, insanlar arasındaki etkileşimi arttırmak ve dolayısıyla mültecilerin yaşam kalitesini arttıran ve onlara güvenli bir ortam sağlayan barınakların yerleşimine vurgu yaparak mülteci kamplarının yaşam kalitesini irdelemektir. Araştırmanın alan çalışması olarak Türkiye'deki bazı mülteci kampları seçilmiştir ve bu kamplardaki barınakların iç ve dış mekanlarının niteliği ve genel organizasyonu irdelenmiştir. Çalışmanın sonucu olarak bu kamplardaki yaşam kalitesini arttırmak için bazı öneriler sunulmuştur.

Anahtar Kelimeler: Barınak, Mülteci Kampları, Mekansal Organizasyon, Sosyal Mekanların Kalitesi

ACKNOWLEDGMENT

I owe my warmest thankfulness to my supervisor Assist. Prof. Dr. Guita Farivarsadri who suggested this topic and without her continuous help, support and enthusiasm this study would hardly be completed. I also express my deepest gratitude to my parents who have kindly supported me during this study.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1

INTRODUCTION

1.1 Background of Study

The word “Refugee” generally describes a person who has been forced to leave his/her country due to war, political, or religious conflicts. Moreover, refugees may also be fleeing the country for other reasons such as armed conflict, generalized violence, foreign aggression or situations that seriously disturb public order (Sipus,2010).

Under this scope, Lori & Boyle (2015) argue that there are different types of migration, such as educational, economic, or family reunification that are legal and be protected from their own country. However, in refugee situation people are forced to leave their origin country because of fear of damages and they need to be protected by the host country. Pinehas.et.al (2016) state that refugees are involuntary migrants that are compelled by extraordinary situation to leave their country/home and childhood memories and should stay in another country just to be safe. In addition, UNHCR (2007) points out to the fundamental right for refugees as:

> liberty and security of person; protection of the law; freedom of thought, conscience and religion; and the right to own property. Refugees have the right to freedom of movement (p.6).

Moreover, when people flee their origin countries and homesteads, they actually leave most of their belongings and memories. They are called refugees and refugee camps

are the places that they look for security and feeling of safety which none of us never willingly choose to inhabit (Graham,2015).

Unfortunately, by 2016 the world observes the highest number of displacements ever recorded that has raised from 30 million in 1990 to more than 65.3 million today. According to UNHCR report, there are more than 63 million people worldwide who have left their home /country and have become homeless. Nearly 20 million of those homeless people are refugees which more than half are children; that is an unprecedented number in recent history of the world. Moreover, about 10 million of these people remain stateless, which means they are in foreign countries and have no access to health care, education and freedom of movement. Surely, wars and civil wars have been responsible of this mass migration that has affected all the world and forced millions of people out of their origin countries and into refugee camps (UNHCR, 2015).

In this situation, the most serious challenge for international humanitarian relief and host countries are to provide adequate shelters and rudimentary living conditions for refugees in camps (Shelter Projects, 2014). In many cases, the same types of shelters used for other types of disasters are used in this case too. Yet, for several reasons these might not be sufficient as refugee shelters. In disaster times and particularly in refugee camps, the shelters should generally have minimum living conditions, space for daily activities, sleeping, personal hygiene and privacy (UNHCR, 2014). After natural disasters, people are in urgent need of a protection and shelter; as survivors suffer physical and psychological traumas as well as social and economic problems. In natural disasters, shelters as short- term settlements should protect people from disaster site and provide personal safety, security protection, and protection against climatic

conditions and diseases until survivors can go back to their homes as soon as their houses are rebuilt. In this situations speed in delivery, ease of construction, perdurability and cost are important issues to be considered in the design of disaster shelters and camps (Bashawri, 2014).

In contrast, in war situations refugees may be obliged to live in refugee camps generally for over five years or sometimes for generations. Therefore, refugee shelters as first and foremost should be homes, more than just a roof. In this regard, Herz (2014) defines refugee shelter as:

> A habitable covered living space providing a secure and healthy living environment with privacy and dignity. Refugees have the right to adequate shelter in order to benefit from protection from the elements, space to live and store belongings as well as privacy, comfort and emotional support (p.22).

Shelters for refugees, like the ones for natural disasters, should include minimum living conditions. However, there are some distinctions between disaster shelters and refugee shelters that make it necessary to give particular attention to the design and organization of these spaces. The first difference as was mentioned above is, the time period that the shelters are used. Although survivors of natural disasters can go back to their homes as soon as their houses are rebuilt, many refugees live in refugee camps for more than five years, sometimes a whole life. For instance, Dadaab refugee camp currently houses some 350,000 people and for more than 20 years has been home to generations of Somalis who have fled their homeland by conflicts. Figure 1 illustrates a part of Daadab refugee camp in Kenya (Sipus, 2010).

Figure 1: Dadaab refugee camp in Kenya. (UNHCR, 2015)

Furthermore, the condition of people in natural disaster who are generally displaced locally is somehow different from those who are relocated due to conflict and war in that they are generally allocated in the controlled camps in other countries than their own facing different cultures and being isolated from the rest of the community.

Consequently, everyone who has been considered with the life in a shelter and camp, will be affected in different ways by how the space is designed and organized. Thus, special care is needed in designing refugee shelters and their organization in camps. This research investigates design considerations of different types of shelters for refugees in one hand and on the other, the appropriate organization of shelters in the camps are looked at.

1.2 Importance of The Study

Designing for refugees is challenging for designers. Based on the number of refugees in the world suffering from living conditions below the poverty line, it is clear that the role and contribution of architects to achieve better living environments for these individuals is undeniable. However, it is not possible to find a comprehensive guideline that can help the designers. This research focusses on creating a guide line which can be used as a reference for designers who work in this field.

1.3 Problem Statement

As aforementioned, wars and conflicts have brought misery for millions of people all around the world. Such conflicts are still going on in Afghanistan, Iraq, Syria, south-east Turkey, Yemen, Libya, Somalia, Sudan and north-east Nigeria. Statistical data deduce that there is an increased need for refugee camps and shelters in hosting countries dealing with this issue.

Refugee camps are set up all over the world by different agencies such as UNHCR and IFRC (International Federation of Red Cross and Red Crescent). The most important problems in many of these camps are the lack of sufficiency and sustainability that cause huge costs for governments and international agencies as well. Moreover, technical problems in infrastructure of camps and provided refugee shelters are the main causes of insufficiency in protection against the climate and environmental issues. In addition, lack of space due to number of refugees in camps, creates problems such as crowding, noise and hygiene deficiency. The next important subject that is ignored in many of the camps is the organization of shelters in camps that indirectly effects on refugee's behavior. Furthermore, deficiency of safe and private place that is directly related to creating sense of "home" can increase psychological problems in refugee camps.

To face these problems, IFRC and The Sphere Project have published standards (guiding principles for sheltering, land and Accessibility) in relation to the qualities that a disaster shelter should have. UNCHR also published "Handbook for Emergencies" related to emergency management, operations and infrastructure of

refugee camps. However, there are no documents in relation with social spaces, free spaces and spaces organization in refugee camps.

So, it is important that relevant agencies involve designers in this process to create proper design for shelters and organization of camps for refugees.

1.4 Research Question

The refugee camp mostly is the place where refugees first encounter an organized societal response to their current situation. Shelters that are used in these camps are generally designed as disaster shelters with low budget many times, in poorer communities with limited resources. As in the first step of setting up refugee camps, functional requirements are more significant issues, providing spaces to cover the psychological needs of refugees is generally neglected. This is why camps organization as cities with proper public and semipublic spaces for social interaction is often ignored. Although with their number of inhabitants, these camps remind of cities, the low quality of open and close spaces and the organization of different sections of the camps make it different from the cities.

In recent years, refugee camp projects have been taken into consideration by relevant agencies such as UNHCR, IFRC, etc. to create the most beneficial environment. However, several unanswered questions still remain as bellow:

1. What are the impacts of space organization in creating sense of home and sense of belongings for refugees in refugee camps?
2. How can an image of home be improved using enhanced designs of shelter and site in refugee camps?

1.5 Aim of Study

Considering the fact that most of refugees live in these camps for over five years, and some for over a generation, it becomes necessary to think about the design of these camps in a different way than other disaster camps that the duration of stay is generally shorter. In this regard, although the first aim in establishing a refugee camp is to provide minimum living conditions generally with limited resources considering the refugees' situation, improving the quality of indoor and outdoor spaces in refugee camps and proper shelters whenever possible can increase the sense of belonging and need for a "home" to some extent. Another critical but less discussed issue in this condition is the organization of shelters in refugee camps and the possible social and psychological effects of these organizations on refugees.

In this respect, the aim of this study will be to argue about the quality of indoor and outdoor spaces in camps with an emphasis on the organization of the shelters. Different types of space organization can be used in camps to provide a safe environment which increases the quality of outdoor spaces and human interactions, hence the well-being of the refugees. As the case study of the research, 9 refugee camps in Turkey are chosen on order to discuss about quality of spaces and the organization of the shelters and some suggestions are developed to enhance the quality of life in these kinds of camps.

1.6 Research Methodology

In order to obtain a strong background, as the first step of study a wide range of literature covering related subjects such as refugee camps, refugee shelters, space organization and environmental psychology were investigated. The sources of literature included books, articles, papers, and documents from relevant organizations

such as UNHCR, IFRC and AFAD (Disaster and Emergency Management Agency of Turkish Government).

Then, in order to respond to the aim of study, 9 refugee camps in Turkey have been analyzed. These camps have not been previously studied in this perspective and in relation to the quality of indoor and outdoor spaces. So, this research tries to evaluate the current situation and provide some suggestions to improve the quality of life in these refugee camps. Due to security reasons, there are limited data and information about these camps' situations. In order to realize the research, the author tried to visit refugee camps and sent several mails to UNHCR and AFAD but unfortunately the required permissions where not obtained and the author could not travel to these camps. Therefore, the available sources about the camps were investigated. As only information about 9 refugee camps where found in UNHCR, AFAD and IFRC sites, these were selected for the case study. It should be mentioned that these 9 camps are among the largest refugee camps in Turkey. The visual analysis related to these camps is done based on maps, images and video recorders which illustrate the conditions in these camps. A discussion follows the analysis of these camps and some suggestions are offered to enhance the current situation. Table 1, shows the structural framework of this study.

Table 1: The structural framework of the study

INTRODUCTION			
Subject Matter	Research Questions	Aim	Methodology
THEORETICAL BACKGROUND OF STUDY			
SHELTER IN DISASTER TIMES		REFUGEE CAMP	
▪ Overview of sheltering process ▪ Types of Temporary Shelters ▪ Disaster shelter and refugee shelter ▪ Considerations in Design of Refugee Shelters		▪ Overview of refugee camp ▪ Functional Requirements in Refugee Camps ▪ Refugee Camps as social spaces sites ▪ The spatial organization of refugee camps	
ANALYSES AND EVALUATION OF REFUGEE CAMPS IN TURKEY			
Shelter Analyses		Camp Analyses	
CONCLUSION			

Chapter 2

SHELTER IN DISASTER TIMES

Disaster can occur anytime or anywhere; it can be a result of natural processes of the Earth such as earthquake, hurricane, tornado, etc. or can be caused by humans such as war or conflict. The common issue is that every disaster has some negative impacts on the country and the survivors. Generally, after any disaster, numbers of people are displaced for a short or long period of time and they need shelters. The number of displaced people can be only one or two families or an entire city or country. Thus, the numbers of needed shelters depend on the number of affected people.

Obviously, good quality sheltering after a disaster, will have considerable social, cultural and economic benefits for the users, and can support their habits of life and family structure. Managing to get highest level of satisfaction and achieving sense of home and belonging in short periods of time is related to the provision of appropriate shelters as well as a proper organization of camps with appropriate layouts.

This chapter will look at shelter projects and consider the importance of designing shelters specific to refugees as long term usage settlements.

2.1 Over View of Notion of Shelter

As a definition, shelter is an area with a roof to protect people and animals from the weather or from danger. Shelters can be made for temporary usages such as to inhabit homeless people, or natural or man-made disasters' victims. Depend on terms of use,

it can be used for short, or long periods of time (Bashawri.et.al, 2014; Alnsour & Meaton, 2014).

In this regard, shelter is the most crucial element in the beginning stage of a disaster for survivors and should provide a safe space and protect users from climatic and environmental risks. Also, it should act as an immediate environment for physical and psychological aspects of family life such as personal safety, health care and education (The Sphere Project, 2011; YÜKSEL&Hasirci,2012; NRC 2014). On this basis, it may be inferred that in disaster time shelter is very important both psychologically and physically for protecting human dignity and to sustain family. Figure 2, shows priority of needs after a disaster.

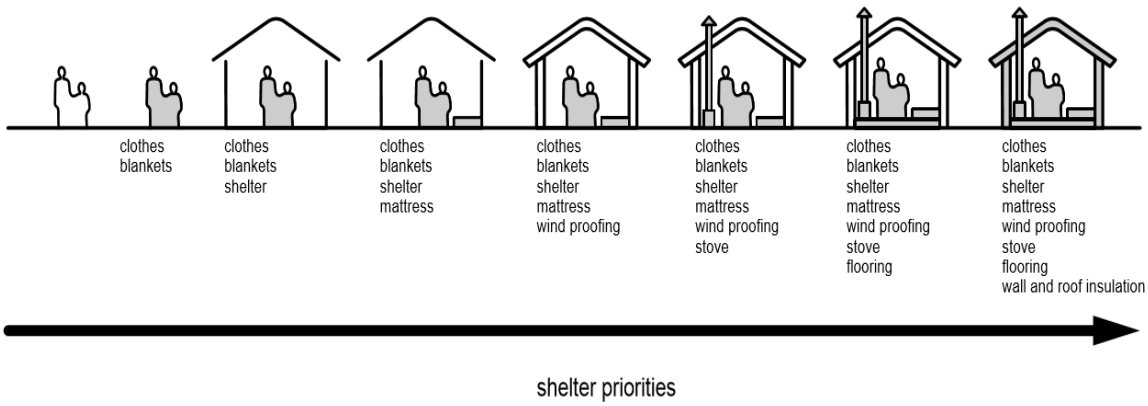


Figure 2: Shelter priorities after disaster. (Oxfam, 2005, p. 237)

As a summary, the aims of designing shelter are provision of a safe and secure space to live, a warm place to sleep and a hot meal, give a sense of home and achieve minimum negative environmental impact in all stages of disaster recovery (Johnson, 2006- Jeff, 2009; Yüksel& Hasirci, 2012; Şener& Altun, 2009; Hareell, 2000).

However, Pan American Health Organization (2000) argues that disaster shelters generally do not have a proper design to provide the primary requirements and services for hundreds of survivors for a long period of time. Moreover, IFRC (2011) underlines some of the problems related to providing proper shelters in disaster times as:

> Providing adequate shelter is one of the most intractable problems in international humanitarian response. Tents are too costly and do not last long enough. Plastic sheeting can be good but most often is low quality and falls apart immediately. Rebuilding houses takes years even when land issues are not major obstacles (p.10).

Besides, physical problems such as noise, insufficiencies in thermal resistance, lack of sanitation, crowding, technical problems, lack of resistance from rain or floods and stable gas leaks are observed in disaster shelters (Şener & Altun, 2009- YÜKSEL & Hasirci, 2012). Some of the problems for sheltering after disaster are caused by the fact that according to Şener & Altun (2009):

> Problems in shelters are caused by the fact that experiences from previous disasters have not been analyzed properly and neither user requirements nor environmental conditions have been taken into consideration during the planning, design and construction stages (p.60).

Providing proper shelters in some cases can be prevented by unpleasant weather, inappropriate location, social and cultural issues, poor services, and overcrowding camps (Davis& Lambert, 2002). Also, more attention must be paid to the groups that are most vulnerable such as women, children, older people and disabled people. Women and children (girls and boys) need supportive care and ensuring sufficient separation from threats in keeping their personal privacy and safety (Paardekooper& Hermanns, 1999).

Some international organizations have been working on developing standards size (m^2/person) that a proper disaster shelter should have. For example, IFRC (2011) refers to minimum size of shelters as:

> Minimum of 3.5 m2 per person in tropical, warm climates, excluding cooking facilities or kitchen (it is assumed that cooking will take place outside); and 4.5 m2 to 5.5 m2 per person in cold climates or urban situations, including the kitchen and bathing facilities (p.221).

Although, IFRC (2011) sets standards for form and size of shelters for ease of packing and production, setting universal standards for shelters are not viable, because there is a high price to produce shelters which can match with the variations in climate, culture and location. Survivors from different cultures and different backgrounds need different kinds of spaces to spend their life comfortable, also, these spaces should be provided in different forms and sizes due to different climates. In addition, high price of lands, storage, transporting and distributing expenses for shelters are major problems which make the process of sheltering costly. Moreover, providing some shelters need technical skill and special materials that also make the sheltering process costly, laborious and taking a lot of time (De Bruijn, 2009). Figure 3 summarizes the sheltering problems after disaster.

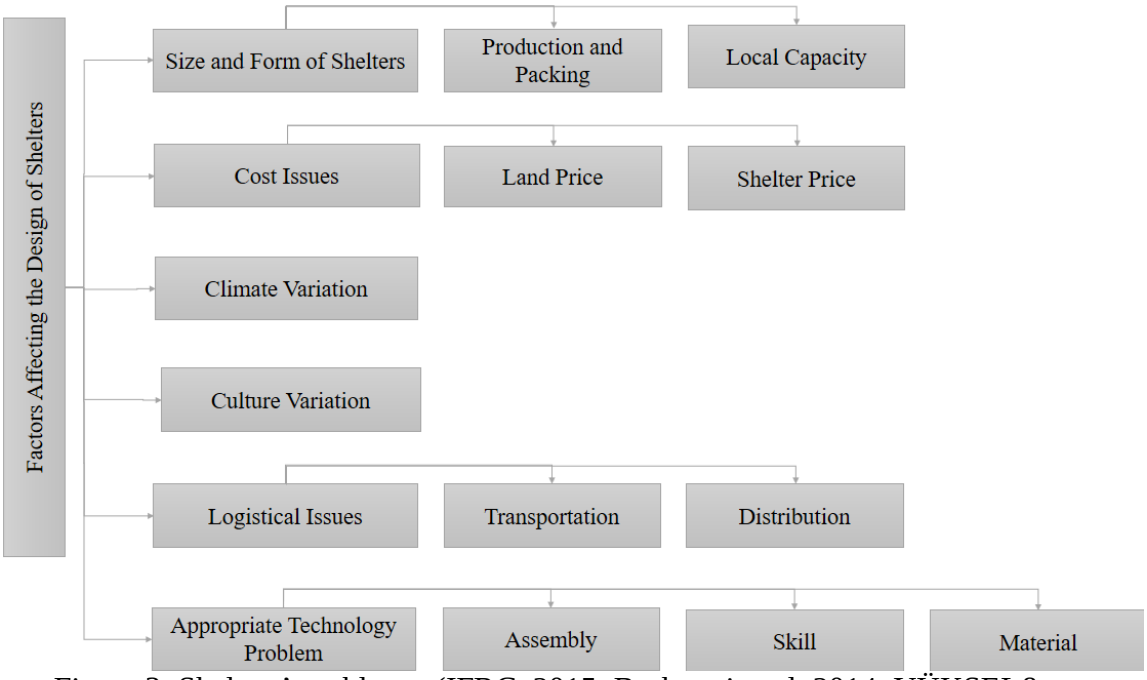


Figure 3: Shelters' problems. (IFRC, 2015; Bashawri.et.al, 2014; YÜKSEL& Hasirci, 2012; Werker,2007)

In this regard, Al-Khatib.et.al (2003) mention that: "Shelter is a process, not a product" (p.4). In disaster time, it is important to consider different stages of a family's transition from emergency shelter to permanent housing. Due to the importance of this issue, The Sphere Project (2011) reports that:

> Existing shelter and settlement solutions are prioritized through the return or hosting of disaster-affected households, and the security, health, safety and well-being of the affected population are ensured (p.211).

Moreover, some researchers refer to importance of shelter condition after disaster to improve the psychological condition of victims; for example, Badri.et.al (2006) argue that:

> Shelter conditions may improve and members of the resettled population may feel a sense of urban belonging, particularly if they have access to community services and a social support network. In addition, after relocation, people may own (or have access to) sufficient land to restore fully previous agricultural production. Most resettlement plans and policy efforts seek to achieve such positive development changes" (p.453).

The next issue is the time that survivors will stay in shelters after disaster, the design of shelters should be suitable for the period of time that shelters will be in use (Davis & Lambert, 2002). Herz (2014) points out to the importance of this context by saying that in emergency situations often tent or shelter kits are used for displacement but if they are going to stay in camps for an extended period, different alternatives and options for sheltering such as dome shelters, mud houses or huts should be considered. He adds that, it is important to notice that the material that is used for long term shelters must be upgradeable and reusable.

Consequently, the general considerations in design process of shelter can be summarized as follows:

- Make sure that living condition for refugees is close to their culture and their habits.
- Provide services, food, and housing equipment for occupants to give them a sense of home.
- Try to minimize the sheltering cost and recurring cost for host country.
- Effort should be made to have a minimum environmental impact in all stages of sheltering and stablishing of the camp (Babister& Kelman, 2002; Ocha, 2004; Herz, 2014; Werker, 2007).

2.2 Sheltering Process

IFRC (2011) categorizes shelters in to: Emergency shelters, T- shelters (Temporary Shelter and Transitional Shelter), Temporary housing, Progressive shelters, Core Shelters and Permanent housing. Figure 4 shows different stages of sheltering process from emergency shelter to permanent housing. It demonstrates the long-term commitment that is required to deliver shelter effectively to disaster survivors (Oxfam International, 2008).

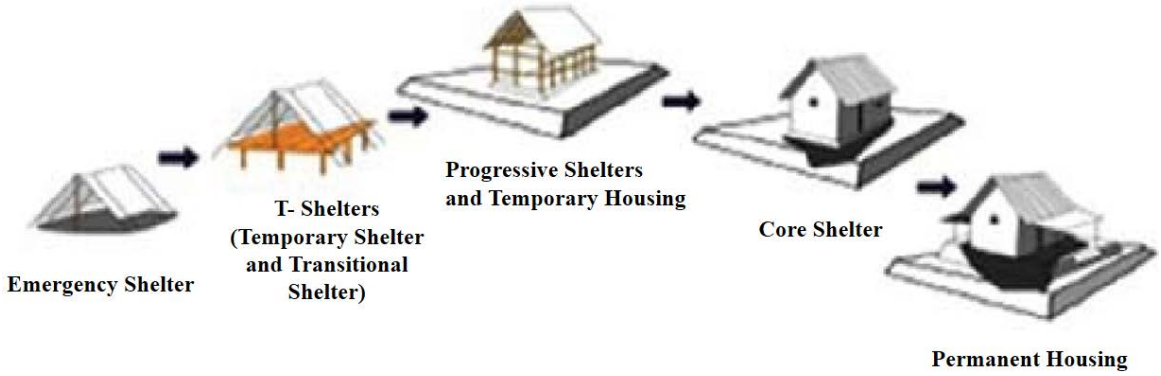
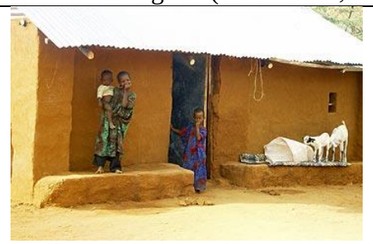
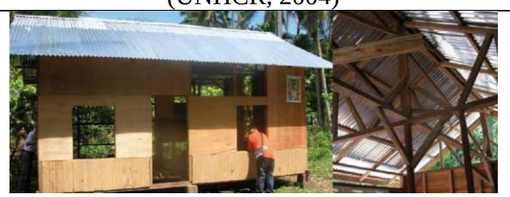


Figure 4: Different Types of Shelters in Disaster Time. (Oxfam International, 2008)

According to Figure 4, at the first days after disaster, emergency shelters are used for short periods as one or two nights; after few days, T-Shelters are provided and assembled that often are used for a long-term about six months that depends on the demand and the capacity of the system. After this stage before permanent housing be ready, survivors are allocated in Temporary housing such as prefabricated shelters with daily facilities that allow affected people to return to their normal life. The permanent housing is developed of core shelters with infrastructure and services such as various utilities and plumbing. Table 2, summarizes the sheltering process from emergency shelter to permanent housing.

Table 2: Sheltering Process. Developed by author; based on Bashawri, 2014; Ashmore.et.al, 2003; Veenema.et.al, 2015; Forouzandeh.et.al, 2008; Quarantelli, 1991; Wu & Lindell, 2004; Johnson, 2006; IFRC, 2011; U.S. Committee for Refugees and Immigrant, 2015)

Sheltering Process	Explanation	Figure
Emergency shelter	• Provided right away after a disaster. • Often is used for brief periods as a night or few days • Often is used in local conditions and circumstances • set up in a suburb or square of city for short time • usually tent is used.	 Emergency shelter in military camp, four days after the earthquake in Turkey. Photo: Records of the United States Senate, National Archives (Shelter Projects, 2010, p.112)
T- shelter (Temporary Shelter and Transitional Shelter)	• Often is used for a long-term period. • Usage depends on the demand and the capacity of the system. • Should provide minimum level of comfort and welfare, and the mental support. • Should follow the standards for various functions of spaces. • Consider the local and environmental factors and multi-functioning. • Can be relocated, and the materials can be re-used.	 Temporary shelters in community of Claudine St. Fleur Camp at Dadadou, Delmas 3. Photo credit: Laura Wagner. (Safe Haven, 2013, p.25)
Temporary housing	• Often used for a long period at least six months. • Is set up on temporary land	 Temporary housing; that offers Dadaab's refugees protection from rain in Kenya. (UNHCR, 2004)
Core Shelter	• Design with infrastructure and services such as various utilities and plumbing. • Success in providing core shelter depends on cost of shelter, security of location, and other socio-economic items	 Core shelter that is built in Indonesia, Sumatra, Padang for victims after earthquake. In this project, monitoring safety of the structures was very challenging given that each family had the freedom to build according to their needs (Shelter Projects, 2010.p.49)
Permanent housing	• It is as upgrade and development model of transitional, progressive or core shelter, • Should be stable and resistant to future hazards	 Different levels of constructing permanent housing in Pakistan, Sindh. Source: (Shelter Projects, 2010, p.75)

In this regard, safe shelter should be easy to adapt to the needs of different user groups. Generally, this process is managed by specialist nongovernmental organizations and funding is provided by Governments. The aim is to make victims more independent (United Nations, 2008).

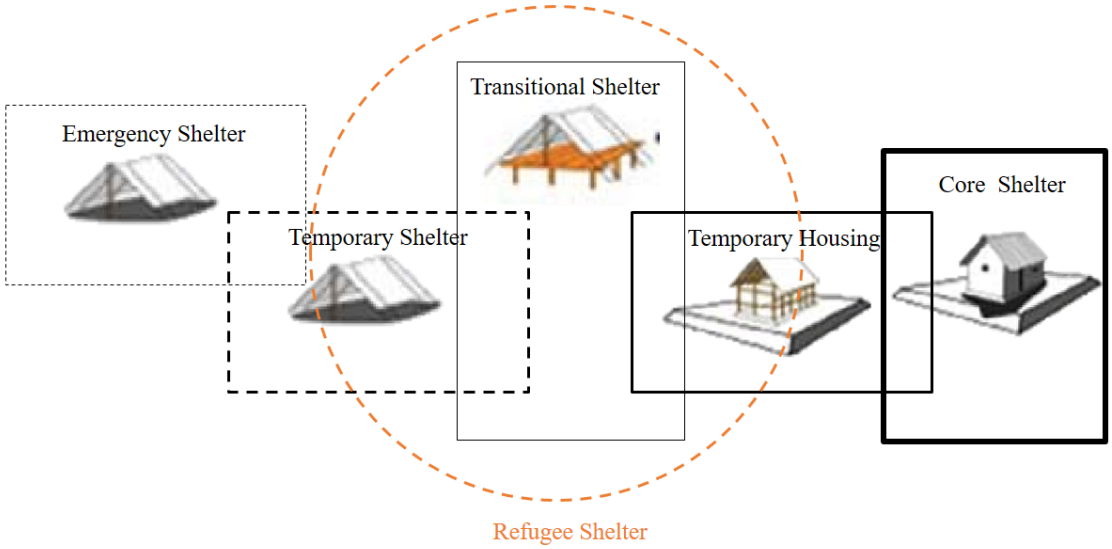


Figure 5: Sheltering process in refugee situation. Adapted by the author (2016)

Figure 5 demonstrates the overlap of different types of refugee shelters which depends on the level of permanence of the shelters in use, the construction materials, the shelter's location and local politics.

2.3 Types of Temporary Shelters

There are various types of temporary shelters which are used in different climates, cultures, locations, etc. Such shelters are produced with diverse types of materials and forms. In this regard, in the following part different types of temporary shelters that are used for refugees are described.

2.3.1 Tent

Tent is one of the usual forms of temporary shelters, that remains an impressive and flexible relief item. Tent is the central element in management of disaster situation and

is often used in refugee camps (Shelter Projects, 2010). Tent is very useful in refugee camps, UNHCR (2007) recommends that, tents that are used for refugees have to protect them from climate conditions, and create an internal moderate temperature and should include space and facilities for storage of food supplies and personal belongings. In the same context, Herz (2014) mentions that:

> The tent becomes the object, which arranges and organizes the daily life of the refugees, but which also gives structure to the camp, and hence assumes most central functions and significance (p.9).

In the designing of tent as a temporary shelter, important factors should be considered in order to create safe and secure space for occupants. Life-span of the units is an important issue that should be considered in designing tents and it depends on manufacturing, the period of storage before usage, climate that it is in use and the care given by its occupants.

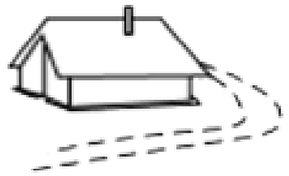
Although, tent has positive characteristics that has made it very popular such as being lightweight, compact, and easy to transport, it does not provide sufficient insulation to keep heat in, so it is not suitable for cold climate, but can save lives of refugees until the suitable shelters are established (IFRC, 2011; Davis& Lambert, 2002). Table 3 lists the advantages and disadvantages of tents as used in refugee camps.

Table 3: The advantages and disadvantages of tent. Developed by author based on (IFRC,2015; Davis& Lambert, 2002)

Advantage	Disadvantage
Light weight	Too small for a family's needs.
Compactness	
Easy to transport	Have short life span.
Erected rapidly and easily	Very vulnerable to wear and tear.

Due to advantages mentioned in table above, tents are very popular and useful shelters in disaster times and in refugee camps. Nowadays, designers design and provide different forms of tent in the world with different functions and structures. Ocha (2004) divides tents based on the forms in to 4 types: Ridge tent, Centre pole with tall and low wall, Hoop tent or Tunnel shape and Frame tent. Table 4 briefly explains these tents and their positive and negative points for usage in refugee camps.

Table 4: Different types of tent. Developed by author (2016) based on Ocha (2004)

Tent types		Advantages	Negative point	Figure
Ridge Tent		• The same as traditional relief tent. • Have slope roof carried by a central ridgepole. • It has proven design and large production with wide capacity. • It is produced by canvas material and metal structure.	• Short life span due to material. • The good type of them are very heavy.	 The Shousha refugee camp on the border of Tunisia and Libya in 2011. (URL 32)
Centre Pole with Tall Wall		• Good headroom with • Large capacity	• Unstable in high wind and heavy snow	 Za'atari refugee camp in Jordan. (URL 32)
Centre Pole with Low Wall		• relatively lightweight • Large production and capacity.	• It has limited headroom.	
Hoop Tent or Tunnel Shape Tent		• The most common shape tent that is used in refugee camps. • Lightweight • Large headroom	• Low production capacity	 Makeshift shelters and new tents in a section for new arrivals at Ifo, one of the three refugee camps at Dadaab in north-east Kenya. (URL 32)
Frame Tent		• It is adapted to be used in cold climate • Good headroom.	• It requires many poles and is costly.	 Suruc refugee camp. (URL 32)

As aforementioned for protection of tents against environmental conditions, plastic sheeting is the most useful and popular tent material in many relief operations and refugee camps. Figure 6, shows plastic sheeting used in DRC (Daadab Refugee Camp).

Figure 6: Plastic sheeting used for covering shelters in DRC (Dadaab Refugee Camp in Kenya). (URL 30)

The positive point about plastic sheeting is that, when good quality materials are used they may remain useful for many years and can be adapted by the users; but its negative impact on the local environment is the disadvantage of plastic which should be considered at the time of use (OCHA,2004).

2.3.2 Prefabricated Shelter (Containers)

Prefabricated shelters or containers can be used, as family shelters to support displaced populations. Containers as permanent or semi-permanent structures are quicker to build. Such shelters are flexible and easy to maintain (Oxfam International, 2008). Figure 7, illustrates prefabricated shelters in Ethiopia refugee camp.

Figure 7: Prefabricated shelters in Kenya. (URL 30)

UNHCR (2014) mentions that, prefabricated shelters as not specially developed temporary shelters, have proved impressive in accommodating refugees. However, they have disadvantages that can be listed as:

- Hard to transport and costly
- Needs more time for production.
- Assembling problem.
- Internal thermal problems specially in hot climates.

2.3.3 Indigenous Shelters

Recently, some architects have attempted to develop more environmental friendly and long lasting shelters by using indigenous materials. Indigenous shelters, are locally set up by using local materials and traditional technologies (Al-Khatib.et.al, 2003). Figure 8, illustrates a good example of Indigenous shelters; named "Sandbag Shelter project" designed by Nader Khalili upon the initiative of the United Nation Development Program (UNDP).

Figure 8: Indigenous shelters in Ahwaz, Iran. (URL 31)

Indigenous shelters can be developed and turned in to permanent houses. In addition, they are more economical than tents and other temporary shelters because it doesn't need special material or technical skill for assembling (OCHA,2004).

Usually locally available materials such as simple rammed earth, old metal sheeting, woven sticks or straw are used in this kind of shelter (OCHA,2004). Figure 9, demonstrates traditional shelters in Acowa refugee camp in Amuria District, Uganda, East Africa where Mud and Grass are used material for construction.

Figure 9: Indigenous shelters made of Mud and grass in Acowa refugee camp in Amuria District, Uganda, East Africa. (URL 30)

The advantages of this kind of shelters are that, they are culturally appropriate for occupants, easier to repair and maintain, use local skills and materials, provide a more

thermally comfortable living environment and are cheaper than other types of temporary shelters. However, they need more time than other temporary shelters for construction.

2.4 Considerations in Design of Refugee Shelters

Considerations in designing shelters for refugees have been analyzed in order to understand how shelters impact on refugees, what kinds of refugee shelters are used in certain refugee camps, and what are the technical, environmental, sociocultural and economic considerations in design of these shelters. About the role of shelters in providing the basic living needs and to cover the physical and psychological needs of refugees Bashawri.et.al (2014) mention that:

> Individuals whose homes have been damaged entirely commonly have serious stress issues. Losing a house has a considerable psychological impact and can cause physical stress symptoms. Losing a house can not only cause serious trauma, but can also cause long-term negative outcomes such as posttraumatic stress disorder. Moreover, users' attitudes and behaviors toward different types of shelters have a crucial impact on levels of post-traumatic stress (p.929).

As previously mentioned, there are various types of shelters that may be appropriate in real-life for different disaster circumstances. There are many factors to be considered in designing shelters. In the following section, the important factors in design of the refugee shelters will be highlighted.

2.4.1 Economical Factors

Money plays a vital role in disaster response and recovery. Refugee shelters need special facilities, services and infrastructures such as sanitation, electricity, etc. Infrastructure of shelters requires considerable amount of money, which make sheltering process expensive especially in underdevelopment and developing countries. There are various factors that can affect the design of shelters economically

(Werker,2007). In the following part, some related factors such as construction of shelters, transportation and distribution will be discussed.

- **Economic Sustainability of Construction of Shelters**

Shelters' construction is too expensive for voluntary communities. Process of sheltering is costly because of limited time and energy needed for construction. There are different types of shelters that can be used for refugees, such as tent or prefabricated units that can be used for a temporary period. Complexity of design in such shelters is crucial issue in sheltering proses. Complex shelters require skilled workers and special kits for construction and repair that make it costly. Zhang.et.al (2014) report that:

> Certain types of shelters, such as plastic sheets and tents, are simply erected for a short time span and then dismantled. If the design of a shelter is complex, it will require more training and resources to build it, leading to potential delays. Therefore, it is important to ensure that shelters will be created on time when developing them (p.929).

In order to come up with a better solution for designing simple shelters, local material from the area can be used to design an economical shelter. In addition, in construction of shelters participation of refugees can psychologically increase the sense of attachment and belonging while reducing the cost seriously. Figure 10, demonstrates Yazidi Refugees from Sinjar in Duhok, Kurdistan who try to construct their own shelters.

Figure 10: Refugee in shelter construction in Duhok, Kurdistan. (UNHCR,2015)

Moreover, the life span of shelters, conditions of location, ease of construction are considerable issues in designing and planning of shelters (International Organization for Migration, 2012).

- **Transportation and Distribution Costs of Shelters**

The cost of distribution, assembly and transportation make the sheltering process very expensive. In this case, using local resources can be an economical way for providing shelters (Loescher& Milner, 2004).

Although, using shelters which can be stored easily will help to save time in disaster recovery process, it is wiser and more economical to use the local resources (such as soil, or bamboo) to construct the shelters. As previously mentioned, allowing the users to participate in building of the shelters not only will increase the feeling of attachment to the space but also will reduce the cost.

According to the needs of the users, design of these shelters can be modified. Figure 11, shows process of allocating a prefabricated caravan as a part of rehabilitation program in Zaatari refugee camp in Jordan.

Figure 11: Transportation of refugee shelters. (UNHCR, 2015)

2.4.2 Functional Factors

An important issue related to functional factors in designing shelter is the size of shelter. Making a satisfying shelter for survivors with different backgrounds, variation in family size and physical and psychological needs as home is a critical issue.

According to IFRC (2013):

> A minimum of 18m2 covered living space is often agreed in humanitarian responses. This is based on a family size of five and 3.5m2 per person, quoted from Sphere indicators (Sphere Project, Sphere). However, providing 3.5m2 per person does not imply that Sphere has been met, nor does Sphere demand that this amount of space must be provided in all circumstances (p.16).

The next important issue in this regard is adaptability to expand the living space. Due to length of time that refugees spend in refugee camps and increase in the number of family members due to birth, refugees generally begin to add new parts to the structure by either creating additional rooms with concrete walls, or combining units (Brun, 2001) (Figure 12).

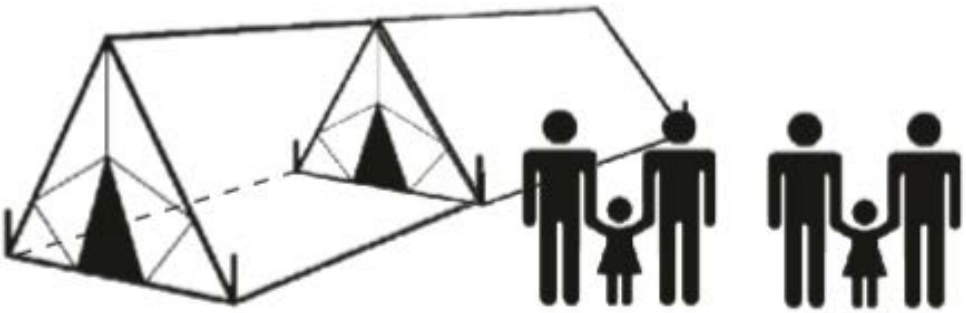


Figure 12: Expansion of the living space. (Slater,2014)

This ad hoc approach should be considered in the design of refugee shelters. In order to overcome the problem of the lack of space, sometimes refugees may cover a part of the exterior space around their shelters. When possible, cooking outside the shelter is preferred. In hot climates, the interior of the shelters can be very hot and creating shaded areas outside the shelters can help habitants to overcome this problem as well.

2.4.3 Technical Factors

Technical Factors are significant issues in sheltering process; because they should include shelters requirements for short and long period of time. IFRC (2015) in relation to Technical Factors in sheltering process mentions that:

> Once construction is complete, consider what longer term support will be required to maintain the shelters and support the people living in them. This support might include toolkits and trainings on maintenance or safer construction. It might also include lighting, solid waste management, livelihoods, or other forms of support (p.14).

This aim should be to ensure meeting the key safety issues and users' requirements. In this respect, different factors and elements should be considered. At the first step, technical survey on appropriate site for sheltering should be done; the second step is considering ease of erecting and dismantling of shelters, the third part is analyzing the material that is required for sheltering to provide for the safety need of occupants.

2.4.3.1 Ease of Construction and Dismounting

In order to make shelters easy to construct and dismount and apply them rapidly in urgent situations, they should have simple design and be light weight with low price. In addition, being easy to erect and dismantle is important for storage of shelters as well. Storage of produced shelters will help to save time in disaster recovery process. Besides, during designing and planning phase of shelters it is important to consider rational usage of the limited resources in disaster time; that will save cost and reduce the space that is needed for storing (UNHCR, 2007).

2.4.3.2 Use of Sustainable Materials

In different types of disaster or international refugee situations, a wide variety of materials can be used for providing emergency shelters or reconstruction process. These materials should provide safe structure, protection from snow/rain and should be secure, safe, eco-friendly and easy to assemble and resemble (Hareell, 2000).

For selecting an appropriate material and insulation for sheltering, different factors such as material quality, cost, appropriateness, local knowledge and local availability of the materials should be considered (The Sphere Project,2011; International Organization for Migration,2012).

By increasing numbers of shelters, the required amount of material for providing shelters will rise. Under this condition, the materials which are used in shelter construction should not lead to any kind of environmental pollution. Considering the environmental impact of construction material is essential and should be in a way to reduce them (UNHCR, 2007). For example, in Rwanda refugee camp using of paper tubes as e simple material for structure of shelters which need small and simple

machinery and low transportation costs; was a good alternative to be found for preventing deforestation (Figure 13).

Figure 13: Paper tubes as shelter material. (URL 53)

It is widely agreed upon that proper construction material can have a positive impact on environment. IFRC (2013) reports that:

> Local harvesting and supply of materials is likely to have a significant adverse impact on the local economy or the environment. The re-use of materials salvaged from damaged buildings should be promoted where feasible, either as primary construction materials or as secondary material. Ownership of or the rights to such material should be identified and agreed (p.225).

The construction materials should be recyclable and sustainable with no harmful emissions. Thus, easy to recycle, upgrade, resell, and reuse after disassembling camps (Kılcı.et.al, 2015).

In addition, consuming natural and available sources of materials for a long-term that support local economy may indirectly impact on local environment. Moreover, “use of local construction materials that grow quickly (such as bamboo) should be promoted to protect the local environment. Procurement of local resources from the host community should be encouraged as much as possible. It is also essential that the team

plan from the beginning how to implement a reforestation project after closure of the camp" (CAMP MANAGEMENT TOOLKIT, 2002, p.31).

Figure 14, shows a shelter which was built using locally available materials including toddy palm and bamboo in Myanmar.

Figure 14: Shelter built using locally available materials including toddy palm and bamboo. (Shelter Projects, 2010, p.63)

However, there might be some unseen environmental problems related to the use of local materials demanded for maintenance and repair in the long-term which are discussed in the following sections.

Insulation and dealing with noise problem in temporary shelters is significant to promote privacy. Noise can cause impairment in the sense of privacy in camps. In this case Ashmore & Fowler (2007) suggest that use of honeycomb material in composite wall structures can provide high sound isolation and control of noise.

Following this context, The Sphere Project (2011) refers to the importance of considering an appropriate material and accurate details for insulation of shelters in order to prevent water leakage inside the shelter. Using galvanized coated sheet material with groove pattern on the roof can isolate roof and flow water off the roof.

2.4.4 Environmental Concerns

Environmental factors are crucial issues to be considered in the provision of sustainable camps. The sheltering program should concentrate on reducing environmental damage. Moreover, extraction and regeneration rates and control of natural sources should be identified. In addition, considering sustainable consumption of natural sources for a long-term that support local economy is essential (The Sphere Project,2011; IFRC,2015; UNHCR, 2007).

On this basis, it can be inferred that, during a life in temporary settlement, the rate of appropriate environmental rehabilitation, for instance complementary planting between spaces in camps should be increased.

Therefore, in the design process for adopting sustainable environmental practices and regeneration program, considering number and amounts of alternatives, using of multiple sources and production processes and possibility of re-use of salvaged materials are recommended.

2.4.4.1 Effects of Climate in Design of Refugee Shelters

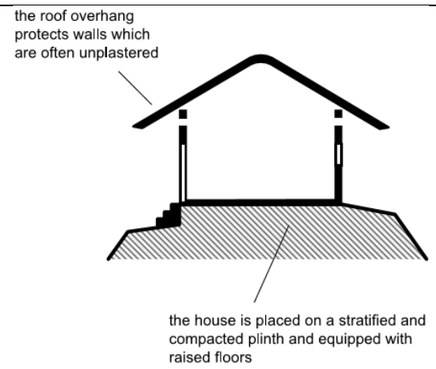
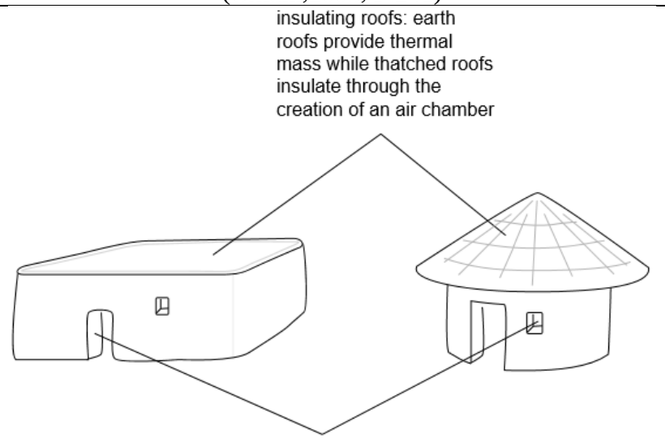
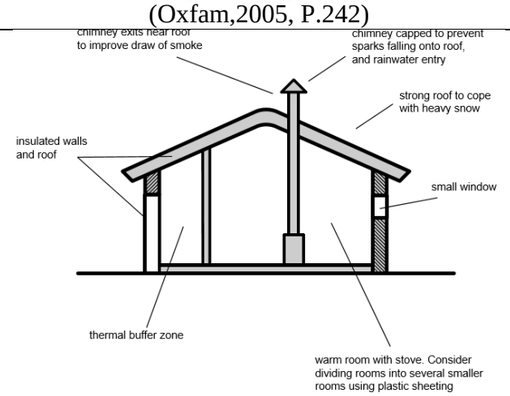
Refugees from different countries with different climatic conditions probably feel comfortable in different types of shelters. Climatic conditions can directly effect on refugee's health. According to this issue, climate variations have significant effect in designing temporary, transitional, and progressive shelters. Design details such as verandas and high ceilings can make shelters be cooler in hot weather, and lobby area or air gaps reduce the effect of cold weather and keep shelters warmer (IFRC,2013; UNHCR, 2007).

Each type of climate requires a different type of shelter. There are three types of climates as follow:

- Hot and humid climate with high rainfall and humidity during a year.
- Hot dry climates which are warm all year, and are extremely hot in the summer and have surprisingly chilly nights.
- Cold climates with cool summers and very cold winters (IFRC,2013; UNHCR, 2007; Davis& Lambert, 2002).

Each climate has specific design considerations and materials to be used in refugee shelters that are summarized in table below (Table 5).

Table 5: Shelters details in different climate, developed by auther based on (Zhang.et.al, 2014; Oxfam,2005)

Climate	Climate consideration	Figure
Hot, humid climates	• The site should be abov the flood plain, and in particular it should be out of the way of seasonal rivers or the highest annual tide. • The slope for a site should provide adequate drainage during the wet season; but it should not be so steep as to threaten the stability of the buildings. • Shelters should be open, with individual dwellings sited far apart from each other, to increase air flow. • Trees and foliage should be kept wherever possible, to provide shade • Roofs should have a sufficient pitch for rainwater drainage. • Generous overhangs help to protect the openings from water penetration during rainy seasons. • Provide sufficient openings for good ventilation and air convection, both in the walls and on the roof. • Canvas can decay very rapidly in hot and humid climates. • Light weight enveloping systems should be used	 (Oxfam,2005, P.241)
Hot, dry climates	• Use white painted surfaces to reflect sun light during the day. • Shelters should be closed during sand storms. • construct thick walls and insulating roofs, that are making shelters cool in the day and not too cold at night. • If shelters with plastic sheeting used, provide double-skinned roofs with ventilation between the two layers, to minimize heat radiation. • Position doors and window away from the direction of the prevailing winds, which are likely to be very hot. • Traditional shelters are often placed in compounds, which offer protection, shade, and fencing for livestock.	 (Oxfam,2005, P.242)
Cold climates	• Stoves and heaters are an essential part of the heating strategy for a shelter in a cold climate. • Insulation and draught reduction are the keys to keeping shelters warm. • Some level of air infiltration must be permitted, which means that the infiltrating air must be warmed, possibly by body heat or by artificial sources. • Ventilation is necessary to prevent respiratory diseases caused by cooking or heating smoke. • Shelters with thick walls and insulated roofs can be very cold if they have leaky or broken windows or doors. • Plastic sheeting is often used for temporary repairs, and it can be used for windows (translucent plastic sheeting) or to create thermal buffer zones. • In the case of windows, two sheets are significantly better than one, because they have the effect of double-glazing.	 (Oxfam,2005,P.240)

According to different climates, appropriate shelters should be designed to protect their occupants from environmental hazards such as earthquakes, storms rainy season, high wind, volcanic, floods and environmental diseases that are posed by mosquitoes, flies, scorpions, snakes and termites.

> It is logical to build timber and/or bamboo-framed structures for earthquake disasters, as such frames are light in weight and thus less likely to cause fatalities than falling masonry structures. On the other hand, in strong winds, these light frames can be more vulnerable (Bashawri.et.al, 2014, p.929).

Therefore, when a shelter will be used for long time, it should have safe structure in areas prone to high winds, flood and fire risk.

- **Wind**

Wind as climate hazard should be considered in structure of shelters. In areas where wind speed is high, shelters should be constructed to resist expected wind speeds. In addition, shelters should be shielded from wind and located at a safe distance from trees, if correctly constructed, a shelter can protect against winds and floods (IFRC,2011; OXFAM, 2005). Table 6, contains more details in this respect

- **Flood**

The shelters should be safe from possible floods as flood water may contaminate oil and sewage, which can be dangerous for health and safety. Moreover, floods might carry dangerous animals such as poisonous snacks to the camp space. Further to this, the design and construction of roads in camps and shelters should be done considering the risks of flooding. For instance, in the camps with high risk of flood a small dam should be used if drainage is not considered. The most significant way to protect shelters from floods is to build them in a place that is not likely to be flooded. Shelters should be sited above the highest recorded flood level, and should be protected by

embankments that are sufficiently high and strong enough (IFRC,2011; OXFAM, 2005). In Table 7, more details about this subject can be found.

- **Fire**

Fire hazard is always a risk in temporary shelters. In dry area, the fire risk is generally related to fires or wild fires; and in cold climates risk of fire is because of cooking and heating which are done inside the shelters. An appropriate adequate distance between shelters is necessary to prevent the import or shift of fire to adjacent shelters. The distance between shelters must be twice the overall height of shelters structures. Moreover, be careful where materials such as woven matting and thatch that are highly flammable are used (IFRC,2011; OXFAM, 2005). Table 8, explains more details regarded to this subject.

Table 6: Details of designing shelters in location with risk of wind. (IFRC,2011, p.p 31-42)

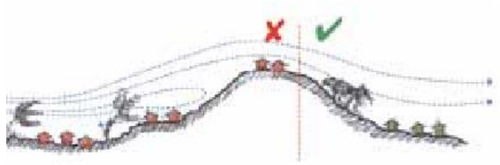
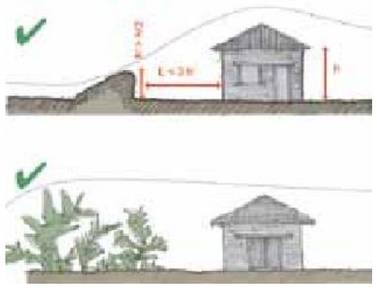
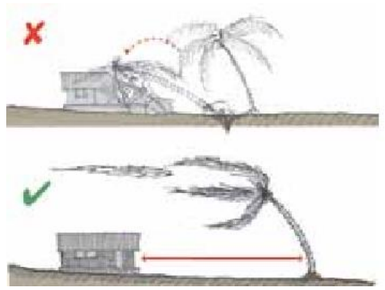
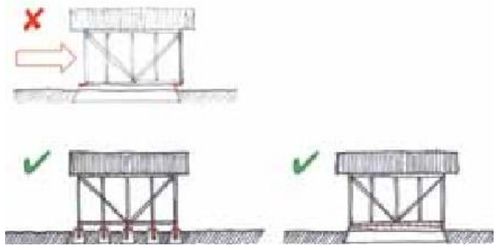
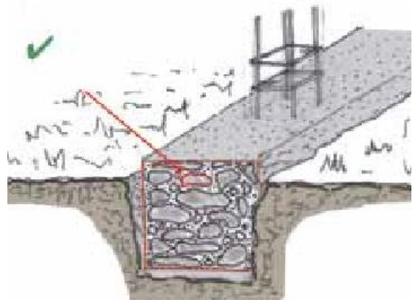
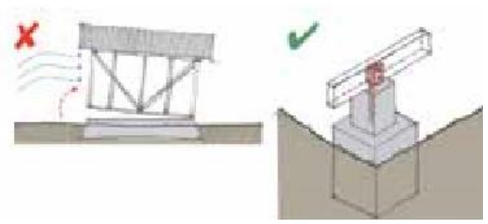
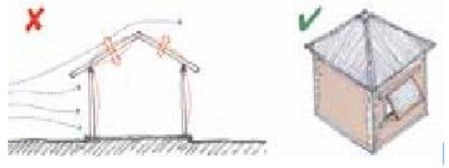
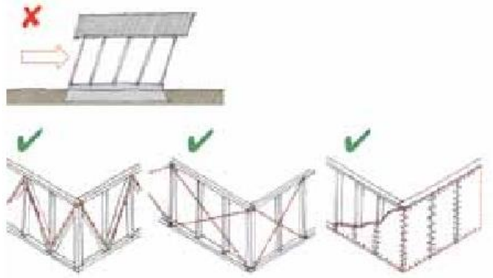
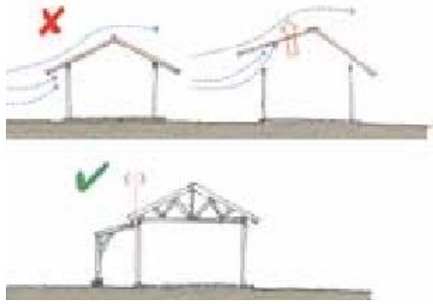
Site and settlement	Foundations	Walls and openings	Roof and Floor
• The buildings should be sheltered by the shape of the land, to protect them from strong winds.  • Buildings should be sheltered by windbreaks, to protect them from strong winds.  • Small buildings should be far enough away from large trees that might fall over. 	• Build the shelter on foundations or piling that rest on stable ground.  • Use good-quality materials (masonry and mortar materials) for bases and foundation walls.  • Foundations or piling should be sufficient to anchor light buildings firmly to the ground. 	• Provide shutters or other protection on openings and use resistant glass or plastic for glazing. Shutters hinged along the top of window frames are preferred as these will not suddenly open and let in the wind, which could result in an increased internal pressure and cause the roof to blow off or the walls to collapse.  • Make strong walls with vertical and horizontal timbers and with sufficient bracing to resist the horizontal forces of strong winds. 	• Build the roof with a minimum slope of 30 degrees (and maximum of 40 degrees). This reduces the effect of suction and uplift from the wind.  • Build the roof with a hipped or conical shape, rather than with gables, to reduce the risk of the roof lifting off.  • Roof overhangs can cause uplifting of the roof structure due to strong winds, if they are connected to the main roof structure. 

Table 7: Details of designing shelters in location with risk of flood. (IFRC,2011, p.p 43-50)

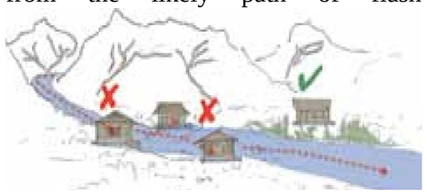
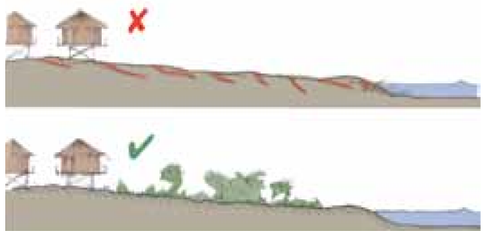
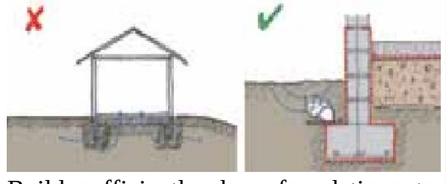
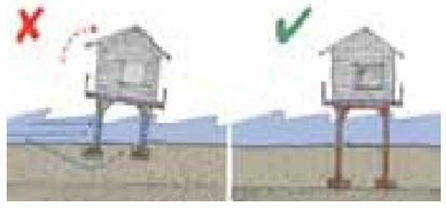
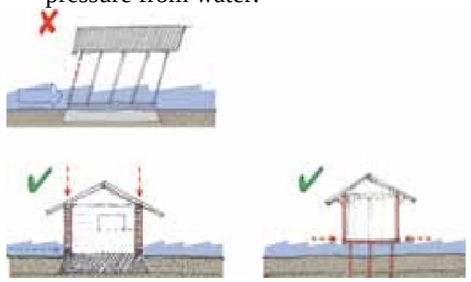
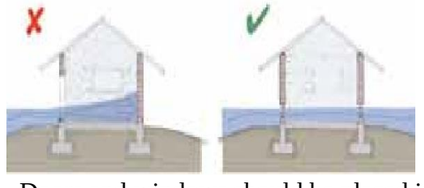
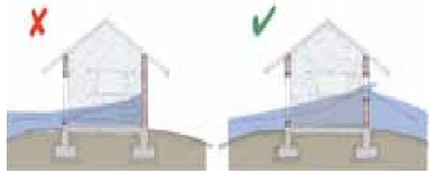
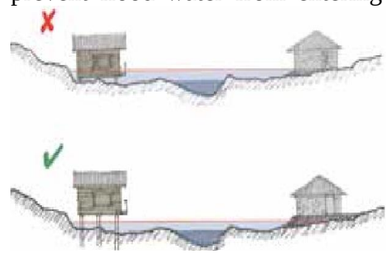
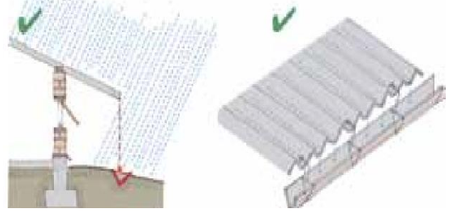
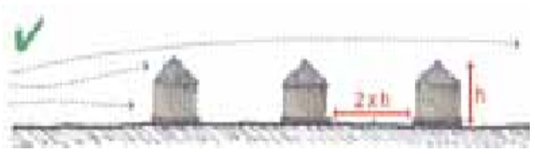
Siting and settlement	Foundations	Walls and openings	Roof and Floor
• Shelters and settlements should be sited away from locations at risk of landslides and rockfalls during heavy rains.  • Shelters and settlements should be sited well away from the likely path of flash flooding.  • Shelters and settlements should be on stable ground to avoid the risk of collapse or landslides during flooding  • Protect shelters and settlements from erosion using ground-cover plants. 	• Build the shelter on foundations or piling that rest on stable ground  • Provide good drainage to the shelter and settlement to minimize erosion of foundations  • Build the shelter on water-resistant foundations and footings or piling to resist water pressure and remain resistant when wet. Plastic sheeting can be put between the ground and the foundations to further protect the structure.  • Build sufficiently deep foundations to avoid undercutting by moving water. 	• Build with heavy walls, or ensure that light walls are well anchored to foundations or piling, to be able to resist pressure from water.  • Use water-resistant wall materials, or add a protective coating to resist waterlogging and retain strength during heavy rain and flooding.  • provide openings near the bottom of walls to allow flood water to move through the shelter without causing it to collapse.  • Doors and windows should be placed in opposite walls to allow water from flash floods to flow out of the shelter 	• Raise ground floors above known flood levels to prevent flood water from entering the shelter.  • Provide a raised platform in or beside the shelter to allow people and possessions to be above the flood level.  • Provide rainwater gutters to protect the base of walls from heavy rain, and to ensure that the water runs away from the walls. 

Table 8: Details of designing shelters in location with risk of fire. (IFRC,2011, p.p 15-16)

Siting and settlement	Construction	Preparedness
• Choose a site that is protected from, or distant from, fire hazards such as industrial fires and bush fires.  • Allow for space between shelters or rows/blocks of shelters whilst taking into account the direction of any prevailing wind.  • Allow space between individual shelters and any local fire hazard such as a craft workshop, kitchen etc. 	• Build the shelter with non-combustible materials if possible.  • Protect combustible materials with fire retardant or by covering with non-flammable material e.g., a thatched roof will be more vulnerable to fire than a roof covered with corrugated iron sheets.	• Set up a warning system at community level to alert householders and firefighters. • Consider providing water points at strategic places. • Have firefighting equipment ready at household and community level and practice its use regularly.

2.4.4.2 Ventilation and Thermal Comfort

Due to different weather conditions, providing appropriate ventilation is a significant issue in disaster sites. In this regard The Sphere Project (2011) states that:

> Adequate ventilation should be provided within the shelter design to maintain a healthy internal environment and to limit the risk of transmission of diseases such as TB spread by droplet infection (p.224).

About this issue, Huang & Long (2015) as part of their research on shelters in Dujiangyan refer to correlation between shelter position and the tolerance for indoor thermal environment as:

> The indoor thermal environment of the house on the edge of the settlement was worse than that of the other houses. This result seemed to be perverse, but it was this that reflected the problem of the temporary settlement's construction: in order to keep the city in an orderly and beautiful manner, the enclosing wall of the settlement was solid. Its wind shadow had bad influence on the air convection in the house on the edge of the settlement, inside and outside which the wind velocity was obviously decelerated, resulting its indoor thermal comfort was worse than others'. Therefore, it was very important to deal with the relationship between the house on the edge of settlement and the enclosing wall, and it could not lay stress more on privacy or beauty and less on thermal and ventilation environment (p.104).

Thus, it can be said that, using doors, windows, and openable vents can be used to control the heat gain or loss. In addition, proper ventilation in shelters helps preventing the risk of suffocation, morbidity and contagious disease (De Bruijn, 2009).

2.4.5 Social and Cultural Factors

"Living in a camp is a challenge" (Norwegian Refugee Council, 2008, p.460). Cultural differences between refugees and host country can create social issues. The requirements related to design details, orientation and styles of shelters might be different for each ethnic group, religion, age and gender (International Organization for Migration, 2012). Shelters should be adapted to various communities and cultures.

In addition, shelter providers must respect refugee's situations and understand user's cultures to provide adequate shelter solutions. Moreover, refugee shelters must reflect the needs and requirements of user's traditional values, religions, family sizes, genders, and local architectural styles (Bashawri, 2014).

In this regard, Habib.et.al (2006) recommend that, safe shelter for resettlement is one of the most significant elements that refugees need. Providing separate areas for children in different ages and genders, considering socio-cultural needs of women and spaces for older and disabled people can ensure healthy spaces, reduce possibility of outbreak of trauma between refugees and development of sense of belonging to the space.

Furthermore, dignity and security are other issues that should be considered as they vary from region to region, community to community, and culture to culture and directly impact on refugee's life and behavior. An important role of refugee shelters is to provide a space for occupants which they can live with security and dignity (IFRC,2015). Lockable doors and windows should be used to ensure a basic level of security (Bashawri.et.al, 2014).

The next issue in this context is privacy. Privacy is the most basic individual level of social and psychological needs of refugees. The lack of space and privacy in refugee shelters, make a difficult circumstance to cope with the impact of the disaster. In this regard, YÜKSEL& Hasirci (2012) have pointed out to the particular importance of privacy in refugee shelters as:

> Temporary housing with minimum living conditions must involve spaces to live, sleep and socialize as well as areas for food preparation, personal hygiene, and privacy, although this last item is relatively difficult to achieve. The reason

> for this is, the relative difficulty of adequately answering the psychological need of privacy compared to a physical need such as a place for personal hygiene. Separate bedroom areas should be provided for children of different ages and gender to ensure healthy development, and to decrease possibility of trauma and increase the sense of belonging (p.229).

In the light of the fact that, refugees and displaced people often migrate to neighbor countries to find a safe place and these people have a traumatic experience of conflict, war and violence, the provision of an appropriate shelter with privacy may be required as an essential need. In addition, temporary shelters count as permanent housing areas for refugees, so considering privacy in design solutions for such shelters are quite valid and should be pursued (Emmott,1996- Ishii.et.al, 2015). To provide privacy, adding partitions which can be used when necessary to shelters can be a solution (International Organization for Migration, 2012).

Further to this, living in overcrowded camps and close proximity to each other with lack of privacy, and noise associated can be stressful for all refugees. In addition, the lack of privacy can be the cause of insufficient space for sleeping, care of infants, ill people or communal family gathering space in refugee camps. Families, unaccompanied, separated women and children, elder or ill people are often hosted in temporary shelters together. Because of emergency situation this type of living sometimes lasts for a long period of time. Separated women and children are more vulnerable and it is important to consider this in providing separate shelter, to confirm their privacy and safety (Norwegian Refugee Council,2008).

As international Organization for Migration, (2012) also states, communication can have a significant impact on recovery of survivors especially in the initial stages of a

disaster. Communication among occupants can be increased using social networks television, radio, workshops, etc. (International Organization for Migration, 2012).

Moreover, as was previously mentioned, refugee shelters are constructed within a short time. Therefore, in this process it should be considered that refugees will make extensions and conversion in time. Besides, internal subdivision in long term settlements should be provided for family members with different genders particularly women, children, older people or people with special diseases who traditionally have a different room for sleeping. In addition, orientation and size of space, position of door and windows, lighting and ventilation, and internal subdivisions should convey a sense of security and safety to users. Furthermore, living conditions for refugees should be close to their culture and their habits and also provide services, food and housing equipment for occupants to give them sense of home.

Chapter 3

CONSIDERATIONS IN THE ORGANIZATION OF REFUGEE CAMPS

In recent years, the refugee crisis has become a crucial issue for international society. The wars and armed conflicts around the world are the main causes of displacing nearly 65.3 million people, and 21.3 million of these people are staying in refugee camps. Some of these refugee camps are same as cities, for example Zaatari camp in Jorden with around 138 thousand population (Slater, 2014). Many times, it is difficult to deal with physical and psychological needs of residents of refugee camps and it makes it impossible to maintain order for host countries and relevant organizations in many situations.

Many host countries now confront the challenges of balancing individual needs of refugees with that of the community. Besides, there are struggles between what refugees think they deserve, and what the camps are responsible for providing. In this situation, the most important issue is to understand that the refugee camps as long term settlements work as communities which should not only provide the refugees with their basic needs and safe spaces to live but also allow them to feel more connected with their surroundings. This attachment to their living space can help refugees to feel more at home. In this chapter, the considerations in design of refugee camps and the space organization in these camps, as small cities will be investigated.

As a simple definition, refugee camp is a temporary settlement (for long or short term) in which survivals are supposed to get humanitarian relief and security until appropriate solutions be found to their circumstance. Ramadan (2013) describes: “the refugee camp is a kind of ‘humanitarian space’, an attempt by the international community to institutionalize a state of protection and relief for refugees in an enduring but ultimately temporary way” (Ramadan, 2013, p.69).

In this regard, Feldman (2015) also mentions that:

> The general commitment of humanitarian agencies and host governments to the idea of the refugee camp as a humanitarian space is the starting point for a set of conversations about what that means (and what are its limits) and what the effects of these spaces are on their inhabitants (p.246).

It can be said that refugee camps are essential spaces as the last lifesaving protection which are provided by humanitarian organizations such as UNHCR, MSF (Medical Humanitarian Organization), OXFAM, IFRC and so on. Therefore, the aims of setting up the refugee camps are:

- Providing safe and secure spaces.
- Increasing sense of home for refugees.
- Providing living space with minimum socio-economic vulnerabilities.
- Providing social spaces and privacy spaces (Habib.et.al, 2006- Giacaman, 1985- Filfil, 1999- Farah, 2000- Al-Khatib.et.al, 2003).

To provide physical and psychological welfare of the inhabitants, which can enhance the quality of the life and increasing a sense of attachment in these camps the quality of spaces is a very important issue. So, careful planning and designing in refugee camps can provide safe and secure humanitarian space for refugees. Unfortunately,

most of these refugee camps are set up in short time and do not consider the physical and psychological needs of refugees; hence camps do not have appropriate condition for refugees.

UNHCR (2014) refers to the important of well- designed refugee camps as:

> Design and develop settlements in the future is expected to reduce some of the refugees' vulnerabilities, facilitate camp management and increase self-reliance opportunities as well as set the foundations for durable solutions. Well-designed settlements reduce negative impacts on existing habitats, boost local economies and reduce dependency on humanitarian aid (p.16).

Having a safe place for living with privacy and dignity is the very basic need of each refugee. However, it is important and indispensable to also consider the space organization and management of refugee camp as a small city and change an emergency situation to temporary relief.

As aforementioned, it is important to consider different elements in refugee camps to answer refugee needs. Therefore, strong humanitarian services and facilities such as shelters, health center, water and environmental sanitation, education, and community services are essential to be provided in the early stage of setting up the refugee camps.

3.1 Economical Concerns

Due to huge number of refugees in camps, the infrastructures, specific facilities and services such as sanitation, electricity, etc. require financial support which make the process of establishing the camps costly for host countries and humanitarian agencies. Unfortunately, often refugees live in poor conditions in refugee camps. No doubt that the first aim in setting up refugee camps is to provide the basics living condition with the available tools for the occupants. This is directly related to the economic condition

of the host country and the aid from humanitarian organizations. In this situation, many of the camps cannot offer a proper living condition to the residents.

For example, in Nyarugusu Refugee Camp in Western Tanzania over 86000 refugees live, who are displaced because of the fear of widespread violence in Burundi. They are living in a quickly constructed camp with less than one square meter per person, with no privacy and little water; which means, they are living in minimum standard for emergency contexts (Knapp, 2015) (Figure 15).

Figure 15: Mass shelters in Nyarugusu Refugee Camp. (Knapp, 2015)

In order to reduce the costs of running camps, it is possible to support and help inhabitants to participate in various kinds of production and even to create their own small business in the camp (Shelter Projects, 2010). Following the primary need of providing shelters, it is possible to assist refugees to earn some money through running small businesses such as production of handmade stuff (Bashawri.et.al, 2014). As an example, the management of Adıyaman camp in Turkey with the help from the local municipality has set up workshops for the refugees (Figure 16).

Figure 16: Adıyaman camp in Turkey. (UNHCR, 2015).

Another suggestion for reducing the costs of running camps is, using agriculture and livestock in refugee camps which can help the economy of camps and provide temporary employment opportunities for refugees. Keeping livestock or agriculture usually needs additional land around the camps and effort to provide separate water points and ensure hygiene at such sites (Norwegian Refugee Council, 2008).

3.2 Site Selection

The first step in setting up a refugee camp is to select an appropriate site. Various issues should be considered in choosing a location for a camp such as environmental conditions, closeness to the main road as transportation facility, it should be safe and resistant to flooding, tidal waves, or sea surges and should have safe distance from the disaster zone (Bashawri.et.al, 2014- Kılcı.et.al, 2015- Pan American Health Organization, 2000). Furthermore, in the long-term usage of site, attention must be paid to evolution and increase in population of refugees. In this regard, it is essential to expect providing provisional, separation and privacy spaces for individual households and adequate space for the required facilities (The Sphere Project, 2011).

To find an appropriate site for camp, different factors such as number of refugees, the function of site, the infrastructures of site, and topography and ground conditions should be considered. The related information is categorized in Table below (Table 8).

Table8: Criteria related to choose of refugee camps site. Based on (Forouzandeh.et.al, 2008; The Sphere Project, 2011; Ocha, 2004).

Factors to Be Considered	Details
Number of effected people	• Number of people in different unit groups.
Existence of site Infrastructures	• Water and wastewater systems, • Energy supply system, • Surface water drainage system, • Communication system Parks and other public green areas,
Topography and ground conditions	• Land geometry, ground slope, and orientation • "For temporary planned camps the site gradient should not exceed 6%, unless extensive drainage and erosion control measures are taken, or be less than 1% to provide for adequate drainage" (The Sphere Project, 2011, p.411). • The lowest point of the site should be not less than 3 meters above the estimated level of the water table in the rainy season.
Accessibility of the site	• Closeness to the main highways or avenues. • Closeness to the essential facilities, like hospitals. • Width of access ways, and the traffic. • Existing or new access routes should avoid proximity to any hazards.

Most refugee camps with centralized facilities and large infrastructures are similar to the small cities. Therefore, safe access to main roads, internal roads, crossings and pathways, connection roads to the different sectors, blocks and communities should be deliberated. Following the important of this issue, Norwegian Refugee Council (2008) mentions that:

> Paths and roadways are often the places where most of the population will communicate with each other and establish informal markets, but they also act as the entry and escape routes for any persons committing any crimes or acts of violence (p.202).

In this context, Camp Management Toolkit (2002) refers to safe access and distribution points as:

> It is vital to ensure that distribution sites are easily accessible and open. Particular attention should be given to aspects such as the distance to the distribution sites and the safety aspects of the roads leading to these sites. The sites and the roads should be well lit (p. 176).

UNHCR (2007) also emphasizes the importance of, roads' and pathways' lighting improvement at night, as well as cleaning all roads layers and surrounding bushes which have direct impact on refugee's health.

3.3 Typical Services and Infrastructure

After site selection, the next step is providing different services and facilities for primary living condition such as living area, health care facilities, feeding centers, school, markets, distribution points, graveyards, reception/ transit area, administration and so on. The amount of these types of facilities depends on number of refugees. More information related to these services and facilities is presented in Table 9 which is derived from UNHCR, UNESCO and the USAID Field Operations Guide (FOG) manuals.

Table 9: Refugee camp facilities developed by author besed on UNHCR, UNESCO and the USAID Field Operations Guide (FOG) manuals.

Type of Facility		No/ Person	Other Notes
Camp Area	Total Open Space	30 - 45 m^2 per person	
Living Area	Covered Space	3.5 m^2 per person	
	Firebreaks	50 meters of empty space every 300 meters of built-up area	
	Water Points	1 per 80-500 people depending on type and flow rote	100-500 meters from any one dweling, gravity-fed systems on higher ground.
	Latrienes	1 per houshold to 1 per 20-50 people	6-50 meters away from house if too far away won't be used. 30 m from water sources.
	Washing Fcilities	1 per 100-250 people	
	Refuse Bins	2 per community	1 100-litre per 10 families where not buried. 100 meters from communal area.
Health Care Facilities	Referral Hospital	1 per 10 camps (200000 people)	
	Health center	1 per 10 camps (200000 people)	
	Latrienes	1 per 10-20 beds and 1 per 20-50 outpatients	Centralised, but with adequate access for ambulances and other transport
	Medical Waste Facilities		
Feeding Centers	Feeding Center	1 per 10 camps (200000 people)	
	Latrienes	1 per 20-50 adults and 1 per 10-20 children	
School	School Block	1 per sector (5000 people)	
	Clasroom size guidelines	In general the standard size for a clasroom for 40 students should be: 6.20×5.75 meters to 6.20×6.50 meters	
	Pre-primary classes	Up to 40 students= 1 m^3/ student; up to 48 student = 0.74 m^3/ student	
	Classes 1-3	Up to 40 students= 1 m^3/ student; up to 48 student = 0.83 m^3/ student	
	Classes 4-6	Up to 40 students= 1 m^3/ student;	
	Tent class- room guidline	55 square meter tent can accommadate 40-45 children	

	Latrienes	1 per 30 girls and 1 per 60 boys	
Markets	Markets	1 per camp (20000 people)	
	Latrienes	1 per 20-50 stalls	
Distribution Points	Distribution Point	4 per camp (20000 people)	On higher ground to facilities walking with heavy items
Graveyards	Graveyard	1 per camp (20000 people)	30 meters from groundwater sources; determine if space is available within host community
Reception/ Transit Area	Latriens	1 per 50 people (3:1 female to male)	
Administration Area	Inclluding offices for government outtorities/ securities, UN ogencies, NGO, meeting areas and warehouses trancing service.		
	Usually near entrance so trucks are not driving in the camp and for warehouse security.		
	Latriens	1 per 20 staff	

3.3.1 Communal, Commercial and Recreational Spaces

Provision of social areas in the refugee camps can increase a sense of belonging and attachment to place in refugees. Social spaces such as social squares and open spaces, public meeting spaces, religious spaces and recreation spaces should be considered as central parts of camps. Furthermore, it is necessary to consider some easily accessible spaces for child-friendly and safe playgrounds. In this context, Norwegian Refugee Council (2008) mentions that:

> If possible, playing fields should be located at a lower height than shelters, because there will be an increased run-off of surface water as a result of necessary removal of vegetation. For security reasons, recreational areas should be relatively centrally located, cleared of surrounding thick bushes and at safe distance from roads used for heavy traffic (p.207).

In light of this issue, it is advisable to focus on psychological needs of refugees, specifically children and adolescent to be a member of society as well as their needs to be in a safe and secure space.

3.3.2 Water, Sanitation and Hygienic

The primary need of each person is to access to the clean water, sanitation and hygiene. Therefore, it is important to provide adequate water, sanitation and hygienic facilities at the earliest stage of emergency situation. “When people flee their homes, they often struggle to safety and easily access adequate water, sanitation and hygiene facilities, endangering their health and survival” (UNHCR, 2007, p. 320).

In order to protect refugee’s health in camps, attention to personal and environmental hygiene is essential. In refugee camps with extremely high population density, appropriate hygienic and sanitation services usually are absent. Although, these infrastructures are complex in nature and expensive, the lack of them is the main cause of communicable diseases (Bashawri.et.al, 2014; Shelter Projects, 2010). In this regard, Pan American Health Organization (2000) reports that: “up to 50% of deaths among displaced people are caused by water-borne diseases” (p.50).

Related to the importance of this issue in refugee camps The Sphere Project (2011) mentions that:

> Design and implement wash programs for people to wash themselves and their clothes and bedding, ensure that people make the best use of their water in terms of the disposal of human faces, controlling mosquitoes that carry diseases, and drainage work. Lastly, ways to improve survivors, nutrition should be considered, such as their ability to store, prepare, and cook food (p.928).

In the same context, Camp Management Toolkit (2002) states that: “The camp management team must be familiar with the traditional sanitation practices of the displaced community. Certain cultural taboos might affect the use of sanitation facilities” (p. 191).

Besides, safe and easy access and closeness to other key services with sufficient privacy (particularly for women and girls) are essential to consider. Furthermore, “the location of toilets and solid waste management facilities must not compromise the cultural, environmental, security or social aspects of the design or layout of individual shelters or of the settlement” (The Sphere Project, 2011, p.224).

According to UNHCR reports, in most refugee camps, women and children have responsibility for collecting water. Hence, the problem related to providing and accessibility to water sources should be one of the vital parts of camps’ design. In addition, types and sizes of sanitation facilities should be safe and convenient and prevent the contamination (proper cover). Moreover, appropriate methods for defecation, waste management and sourcing safe water should be considered (UNHCR,2007).

3.3.3 Administration Space and Facilities

Administration and the communal spaces in refugee camps better to have multi-purpose areas for facilitating various dependent alternative uses (Norwegian Refugee Council, 2008). Table below (Table 10) illustrates more information related to administrative services that are often needed in refugee camps. In organization of these spaces in refugee camps simple access to all sectors and communities (depending on management size) should be considered.

Table 10: Detail of Administrative Spaces and facilities. From UNHCR (2007)

Administrative Space and Facilities	
Administrative Space	Camp administrative office
	Offices for feeding programs, water supply, education.
	Storage
	Initial registration
	Community center
Administrative Facilities	Supplementary feeding centers
	Education facilities
	Commodity distribution centers
	Garbage collection

3.3.4 Health Center

Number of mortalities in refugee camps, increase depression and violence among refugees, and low level of health care increases the birth rate in the camps. These illustrate the importance of a health center in a refugee camp. The position and access to health center is an important issue that should be considered in organization of refugee camps. Simple access, providing an easy way for all groups and access to main roads are factors that must be noticed in health center's location (Cronin.et.al, 2008; Toole, & Waldman, 1993; Lori & Boyle, 2015; Zarghami, & Faturechi, 2015).

3.3.5 Burial Grounds

According to high risk of mortality in refugee camps, appropriate land outside a camp for burial should be considered. Moreover, in order to reduce contagious diseases such as malaria risk, infections and life-threatening diseases, in organization of burial land in camps, attention must be paid to have safe distances from refugee shelters (UNHCR, 2007).

3.4 Different Units in Refugee Camps

Refugee camps as small cities are populated by different ethnic or religious groups. These people are now living in a semi-rural camp environment and sharing spaces and resources. In this regard, UNHCR and IFRC describe the modular organization of refugee camps according to the number of the inhabitants as is summarized in the following table (Table 11).

Table 11: Different modules in refugee camps. From UNHCR (2007)

Smaller Unit	Larger Unit	Approximate No. of People Per Unit
1 Family or Household		4-6 People
16 Families or Households	1 Community	80 People
16 Communities	1 Block	1250 People
4 Blocks	1 Sector	5000 People
4 Sectors	1 Camp	20000 People

Based on Table 11, the basic part of refugee camps is the community which includes approximately 16 individual families or shelters. Each community usually includes families, relatives or neighbors from the same countries and religions. 16 communities with about 1250 populations create a block. In designing blocks attention should be paid to appropriate size and form of block for a various range of social and cultural activities in large scale, as well as for providing a safe and secure area for the neighborhood and residents. The next level in refugee camps is a sector that includes 4 blocks or 16 communities with approximately 5000 populations. In this case, considering main square and social space where refugees meet each other and news are exchanged, is essential. Besides, depending on numbers and ages of children different sizes or levels of schools and education facilities should be provided. 4

sectors create a camp that includes different activity centers, health center and administration area. Each of these spaces has an especial location in refugee camp organization. Figure 17, summarizes different activity centers necessary in different levels of camp organization.

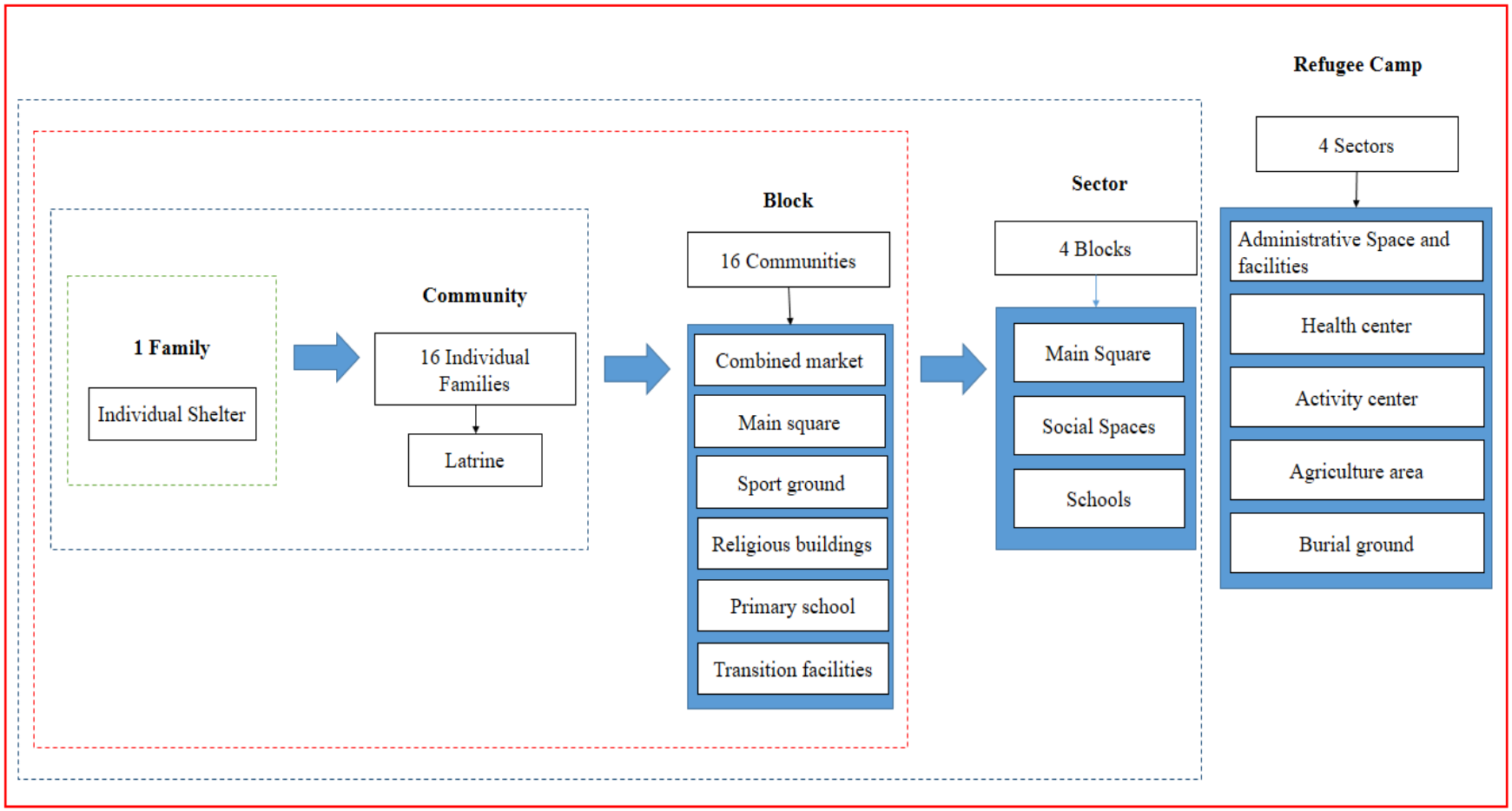


Figure 17: Different activity centers in different levels of camp organization. Developed by author.

3.5 Social Considerations in the Design of Camps

Refugee camp is a space for protection (Crisp, 1998- Shearlaw,2013- Rosenberg,2011- Lischer& Sarah Kenyon, 2006). Generally, refugee camps are aggregates of shelters linked by spaces such as cities. In spite of the fact that most camps are as crowded as cities and have different parts with different functions similar to a city, it is very difficult to perceive these camps as cities for several reasons. The organization of the shelters, their quality, the quality of open spaces, lack of greenery, etc. make the appearance of many camps much different from the cities.

Moreover, it should not be forgotten that refugees have passed from a traumatic situation, have had harsh experiences in their lives and have not come to these camps deliberately and always have a hope to either go back to their own lands or to move to a more stable life. For example, one of the Syrian refugees, who live in Lebanon refugee camp near Talkalakh, has mentioned that, "We would not consider the option [of going to the Europe]. I prefer to eat a piece of bread with salt here - closer to my country, rather than die abroad, where no one knows me"(Ojewska, 2016). They hope that one day they will be able to go back to their own country, Syria.

Considering refugee camps as big societies composed of different people with different backgrounds is necessary. There are several issues in relation to man-environment relationship that are very important in how people perceive their environment. “The term “sense of place” is often used to describe the prevailing character or atmosphere of an individuals’ relationship with a place. It is used in relation to those qualities and characteristics that make a place special or unique, and that makes people feel connected to a location and foster a sense of human attachment

and belonging. The cultural identity and heritage of a place, through the degree to which it contains visual reminders of its past through preservation can also help to create a sense of place" (Scannell & Gifford, 2010, p.5). The sense of belonging is a basic human need and its level of importance is close to need of water, food, and shelter. A sense of belonging is, being part of, and feeling at home in the residential environs. Sense of belonging can be so influential that it can have impacts on social skills, mental health, physical health, and motivation. According to some researches, an individual's well-being can be jeopardized by only one instance of exclusion from a group (Hagerty & Williams, 1999). The next is sense of attachment that contributes to subjective well-being, affect regulation, high self-esteem, positive person perception, and well-adjusted interpersonal cognitions and behaviors. "Attachment to place is defined as 'individuals' commitments to their neighborhoods and neighbors'. Indeed, prolonged association between an individual and a place is widely recognized as one of the features of attachment to place" (Scannell & Gifford, 2010, p.9). Like every cognitive representation, the sense of attachment has been found to be activated by actual or imagined encounters with supportive others even among insecurely attached persons. (Mikulincer.et.al, 2001). Another factor to be considered is the sense of home that is not just defined by a home facility for refugees; it also provides symbolic meaning in the sense that they have feelings of belongingness or rootedness and personal memories associated with their home, just as they have toward their home places (Wiles,2008).

Issues such as place attachment or sense of belonging and sense of home might develop different for refugees. On the other hand, the development of these feelings might be even more important for a healthy life in refugee camps.

In this regard, mental health is one of the significant considerations related to the refugees and also the main purpose of the World Health Organization and Refugee agencies (Korpela, 1989). According to UNHCR report, the mental disorders and depression are rising in refugee camps each day and the results are increasing violence and conflict between refugees. In this regard, considering the mental health of refugee society is getting more significance in camp planning (Mind for better mental health. 2009).

Therefore, a proper design of these camps might help to reduce some of these problems by creating better social interactions, and better sense of home. In this context, Korpela, (1989), Williams& Vaske (2003), and Peters.et.al (2010) refer to place attachment as a positive emotional relation that develops between groups or individuals and their surrounding environment. Hence, to achieve a sense of attachment and belonging, refugee camps require reviving social sense and relation between refugees. In other words, in the planning of refugee camps attention must be paid to the spiritual, intellectual and emotional features of refugees, their lifestyles, value systems, ways of living together, traditions and beliefs.

In this context, The Sphere Project (2011) mentions that, need to feel connected to the place and other people is one of the primary psychological concerns in refugee camps. In the same context, Peters.et.al (2010) mention about the importance of urban network in facilitating communal connections. As displaced people feel isolated because of stresses upon them, to make people feel more related to their new living space, it is possible to involve them in the process of construction of the shelters or include local people in the design process (Peters.et.al, 2010).

Furthermore, many researches (Peters.et.al, 2009; Alahmed.et.al ,2014; Whyte, 1980; Bradford, 2013) have discussed about human interactions and their relation to their experience of place and to the concepts such as place attachment, place identity and sense of place as globalization, increased mobility and environmental problems are threatening our connections to places. Nowadays person-place bonds have become fragile as globalization, and encroaching environmental problems threaten the existence of, and our connections to places important to us (Mind for better mental health, 2009). It seems that refugees who have been forced out of their homes are the most extreme examples of this situation. Social interaction is defined as an exchange between two or more individuals in society (Gehl, 2011; Ford, 2000; Luz, 2004). Most of social interactions are done in well-defined in between spaces and social spaces (Lam, 2011; Rapoport, 1982). Hertzberger (2000) defines social space as: "wherever people happen to meet- by chance or as passers- by -or converge in the act of meeting- whether accidentally or deliberately for gatherings or appointments we can use the term social space" (p.350).

One way that can be useful in creating more pleasant environments and spaces to enhance interactions in refugee camps is to use green area in the camps. Related to this issue, Peters.et.al (2010) mentions that:

> Two indicators for social cohesion are relevant, namely social interaction and place attachment. By using urban parks, visitors connect with the area and interact with other people who use the same area. Both dimensions potentially contribute to social cohesion (p.94).

According to the fact that camp sites may rarely include pre-existing greenery (tree, bushes, etc.) and even more rarely allocated additional areas for gardening it may be more reasonable to consider possibilities for green area in connection with the already

existing spaces around workshop spaces, baths, etc. to work as gathering spaces. A sample of green space as a place for social interaction in refugee camps, proposed for Zaatari camp is illustrated in Figure 18.

Figure 18: Green space as a place for social interaction in refugee camp. (URL 56)

Easily accessible green spaces in refugee camps can improve social interaction between refugees. Green spaces in camps encourage social contact by providing informal meeting spaces which enhances the mental health of refugees, decreasing deration and feeling of isolation. (Health Council of the Netherlands.2004). Moreover, Krause& Shaw (2000) and Krause (1987) speak about the effect of social interaction and sense of community in restoring feeling of personal control and self-esteem. Green spaces can improve refugee's mental and physical wellbeing through providing connection with nature and doing outdoor activities.

There are lots of researches, which show that green spaces can reduce stress, improve school performance, increase sense of community and provide psychological benefits among its members (Kaplan, 1993; Ulrich.et.al, 1991; Wells, 2000; Taylor.et.al, 2001; Maller.et.al, 2009).

Taylor (1987) also suggests that the best way to grow communication and interactions between people is designing environments such as gardens and yards. In the same regard Rapoport (1982) argues that providing and designing personal spaces such as yard can improve communication attitude and interaction among the residents.

The next important factor is to pay attention to and define adequate public and private spaces in organization of camps to provide a sense of belonging as well as safety and privacy. Madanipour (2003) mentions that:

> For some, this private space is where they can take refuge from the outside world, to relax, to make sense of the world, or to feel in control. In contrast, some may feel trapped inside this private space, unable to reach out, while others may be afraid of entering it, preferring to spend their time always in the company of others, for fear of turbulent feelings, bad dreams, or boring loneliness (p.7)

The word 'public' and 'private' can be translated into spatial concepts of 'collective' and 'individual'. Hertzberger (2000) explain public and private spaces as:

> Public area: an area that is accessible to everyone at all times; responsibility for upkeep is held collectively, private area: an area whose accessibility is determined by a small group or one person, with responsibility for upkeep (p.12).

He also explains public and private spaces as a series of spatial qualities in relation to accessibility and responsibility. Following this issue Madanipour (2003) mentions that:

> One of the main themes that can be identified in the relationship between the public and private spheres is that they are interdependent and largely influence and shape each other (p.239).

As Lefebvre (1991) and Ford (2000) also mention generally there is no strong separation between public and private spaces and there are connected through some semi-public and semi-private spaces (Lefebvre, 1991; Ford, 2000). Unfortunately, the

quality of open spaces has been neglected in many of the refugee camps (Shearlaw, 2013). Figure 19 shows an example of semi-private spaces that are made by refugees in Dadaab refugee camp in Kenya.

Figure 19: Dadaab refugee camp in Kenya. (URL 57)

Besides, in relation to distinction between private and public spaces Madanipour (2003) mentions that:

> The distinction between the private and public, therefore, starts here, between the inner space of consciousness and the outer space of the world, between the human subject's psyche and the social and physical world outside. The way we make this fundamental distinction has a direct impact on all forms of institutionalized public-private distinctions in our lives (p.7).

Moreover, personal space is an important part of private space that is defined as "a space that is emotionally charged and helps regulate the spacing of individuals… spaces that are personalized by people who inhabit them and the processes through which this personalization occurs" (McMillan & Chavis, 1986, p.20).

The size of personal space is a controversial issue that is dependent on ages, sense of confidence and independence, sense of vulnerability, fear, and status of the individual in society. Too much or too little sizes of personal spaces, can have negative impacts on individuals and their interactions. In other words, ignoring an appropriate size for personal space can "create overload, stress, arousal and anxiety, loss of privacy as well

as negative attributions and inferences in communication, and fear and discomfort" (Stevenson & Sutton, 2011, p.50).

Sometimes many people share their personal spaces in a public open space, for instance, meeting a group of friends in a street. Providing a shared private space refers to opening up the personal space to people that are qualified as friends or associates. Besides, public space is defined as the co-presence of people. Public spaces are spaces for social interaction. Unfortunately, public spaces or open public spaces in organization of refugee camps as a big society are generally ignored (Lefebvre, 1991; Lischer& Kenyon,2006).

Hence, in design the layout of the refugee camps, the defined spaces for social interactions, in-between spaces, and well- designed open spaces should be proposed.

3.6 Space Organization of Refugee Camps

Camp organization is a controversial issue that is often ignored in emergency situations as refugee camps frequently are not designed and planned by architects, and urban designers but based on some predetermined models. For example, a UNHCR Handbook for Emergencies provides some standard models for refugee camps organization based on universal human rights and needs (Herz, 2014). On the other hand, the organization of refugee camps can have significant impacts on refugees' protection, health and well-being of community in camps. Moreover, proper design will simplify an equitable and impressive service delivery in refugee camps. The camp plan should be suitable for the configurations of camp site, and the characteristics of the surrounding environment. In addition, the organization of camps should cover the physical and psychological needs of refugees from different ages, genders, cultures

and backgrounds. As mentioned before, a refugee camp should be organized as a compact small town or city that reflects the functional principles as well as socially relevant spatial relationships. Furthermore, it is a critical issue to make suitable distances between the various activities and administrative units. It means that, in camp organization special attention should be paid to physical and psychological needs of the camp population; physical considerations including local condition, topography, prevailing wind, vegetation; and psychological condition including culture of refugees, refugee's backgrounds, different range of ages, etc.

A refugee camp is a composition of spaces that are different in size, form, and function but related to each other by proximity or visual ordering tools such as an axis. Ching (2014) divides the basic types of space organization as Linear, Radial, Central, Grid, Clustered and Composite. There are several basic organization types that are proposed in different guides for refugee camps which are described in the following sections.

3.6.1 Linear Space Organization

The linear plan provides the road hierarchy and allows a more streamline approach to good delivery within the community. In this case Ching (2014) explains linear organization as:

> A linear organization usually consists of repetitive spaces which are alike in size, form, and function. It may also consist of a single linear space that organizes along its length a series of spaces that differ in size, form, or function. In both cases, each space along the sequence has an exterior exposure (p.206).

In addition, because of it characteristics, linear organizations express a direction, movement, extension and growth. For limiting its growth, linear organizations can terminate spaces or forms by elaborate or articulated entrances, or by merging with another building's form or the topography of sites (Ching,2014).

Slater (2014) mentions that in many of refugee camps this kind of plan with road hierarchy is used which lead to creation of a gridded urban network, however, the results are lack of in-between spaces, well-defined public spaces and social spaces. However, Ching (2014) also states that:

> Curved and segmented forms of linear organizations enclose a field of exterior space on their concave sides and orient the spaces toward the center of the field. On their concave sides, these forms appear to front space and exclude it from their fields (p.207).

Figure 20, shows a sample of concave linear organization by Ching.

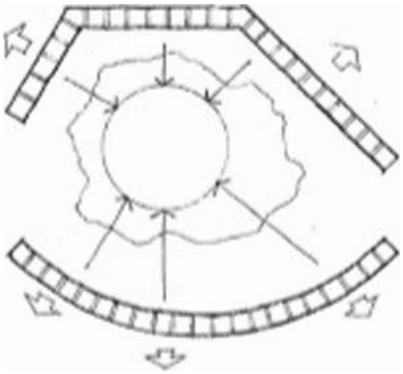


Figure 20: Concave linear organization. (Ching,2014).

3.6.2 Grid Space Organization

The next alternative which is often used in refugee camp's space is the grid, organization. Ching (2014) explains grid organization as: "A grid configuration consists of two sets of parallel paths that intersect at regular intervals and create square or rectangular fields of space" (p.265). In relation to the importance of a grid pattern in space organization Burrell (2013) mentions that:

> Regular points are established at the intersection of right-angled lines and if done in the third dimension, these present a set of modules in space. This produces a grid of predictability and control where patterning is well understood and allows control of self and of movement. Whilst some grid references will be viewed as positive, this also entails that some spots will be

> seen in a negative way. Zoning of this type is often found in grid systems (P,31).

The grid pattern is transformed into a set of repetitive, modular units of space (AFAD, 2016). In the case of the refugee camp, the grid pattern is quick to layout, easy to maintain but as recent publications have indicated there are frequent problems associated with this scheme such as access problems to different services and facilities of the camp especially for disabled people and children. Slater (2014) believes that, the rigid structure creates military-like camps that decrease cultural connections among occupants. Also, in gird organization, the protection concerns should be noticed for persons with specific needs due to long distance for services and susceptibility to violations (UNHCR, 2007). However, this type of space organization because of speed and simple construction is often used in refugee camps (Figure 21).

Figure 21: Islahiye refugee camp in Turkey. (URL 58)

3.6.3 Clustered Space Organization

Another alternative for space organization is clustered. Clustered organization attempts to facilitate social communities in refugee camps.

> A clustered organization relies on physical proximity to relate its spaces to one another. It often consists of repetitive, cellular spaces that have similar functions and share a common visual trait Such as shape or orientation (Ching, 2014, p.222).

The cluster organization is flexible and easy to grow as it does not have a rigid geometrical order. In this kind of organization adding an access can be used to unify part of organization or emphasize some spaces with this organization (Figure 22).

Figure 22: Clustered organization. From (Ching,2014)

In the case of refugee camp, clustered organization allows arrangement of infrastructural elements, such as roads and electricity, etc. to be distributed from a central location. In this kind of organization generally many of the facilities such as water, latrines, bathing, garbage, school, etc. can be decentralize while some such as administration offices, health center, etc. can stay in central location.

Slater (2014) mentions that “cluster planning gives occupants more freedom and responsibility when it comes to their individual shelter. In addition, cluster planning helps avoid some of the adverse environmental effects that result from the grid planning approach” (Slater, 2014, p.30). For example, this type of space organization is suggested by Slater (2014) for Zaatari refugee camps (Figure 23). The main concept of this alternative is to create blocks of shelters with some semi- private spaces between them that can be used for gathering, sitting or for children to play.

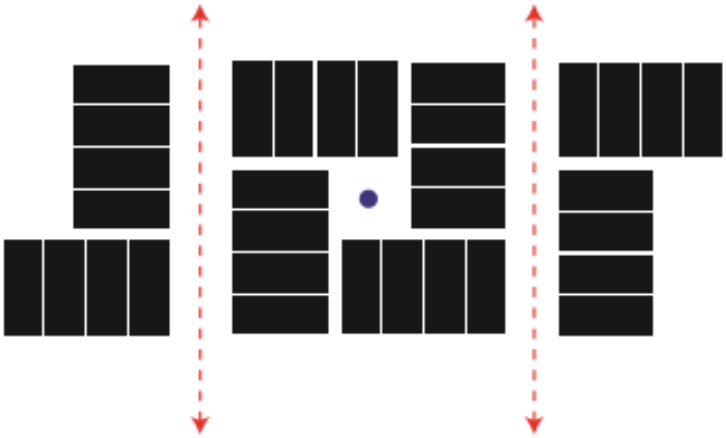


Figure 23: Suggestion of space organization for Zaatari refugee camp. (Slater, 2014)

Different types of space organizations are suggested for refugee camps. In most of refugee camps usually parallel streets with linear or grid organization are used. In this regard, problems in layout and locations for services in each community should be avoided. UNHCR (2007) states that in refugee camp organization, a rigid grid that is not suitable for community layouts and directly affects the interaction of refugees, should be avoided.

Further to this, the layout of refugee camp can be organized following a modular method or cluster planning. The organization of the camp must start from the smallest module and then building up larger units and services. The family unit can have an organization to provide privacy in the individual spaces and a communal area in the center for socialization. Figure 24, shows a sample of community cluster unit which is proposed for Zaatari refugee camp.

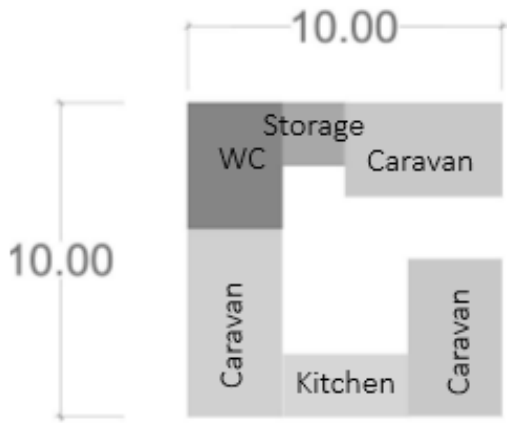


Figure 24: Family unit (community) in Zaatari refugee camp. (UNHCR, 2015)

Based on The UN Refugee Agency (2015) for living unit's arrangements in refugee camps attention must be paid to the physical and psychological requirements of the refugees' family, such as appropriate location of water taps and personal latrines with safe distance from individual shelters; and considering the relationship to other members of community.

The spaces in a camp can be designed more effectively if they are approached like those found in the cities; that means with large programmed public spaces in the center and more informal but planned ones all around the camp.

The refugee camp's space organization is an attempt to find an appropriate alternative to have a greater spatial cohesion. Unfortunately, in the case of space organization, there is not any best example of refugee camp design; however, there are a number of urban design examples that, although each is different, can help us to form a picture of suitable urban social spaces, open public spaces, city blocks, in-between spaces and so on.

Figure 25 shows the plan of a town in Zeeland Province which is designed by Hertzberger for a new residential area. In this project, units are grouped in seven urbanized cores consisting of inside-out city blocks. The small garden inside blocks provides a green zone looking into the semi-public park for family houses. Moreover, next to blocks the in-between spaces as socialization space for occupants are considered.

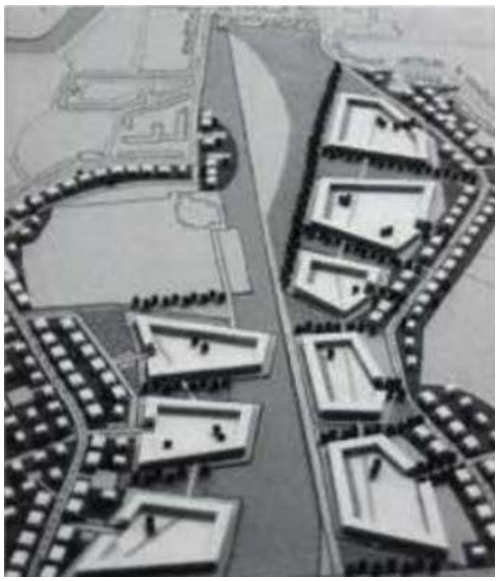


Figure 25: Veerse Poort, Middelburg 1995. Model. (Hertzberger,2005)

Figure 26, illustrates the Elisabethaue in Berlin-Pankow. As can be seen in the photo the urban plan is accessed by a central spine with branches leading off to the residential blocks. This pattern made it possible for the surrounding nature to penetrate the scheme without being cut off by main roads. Moreover, in this case the close proximity of green open space is eulogized as the one quality of such habitats.

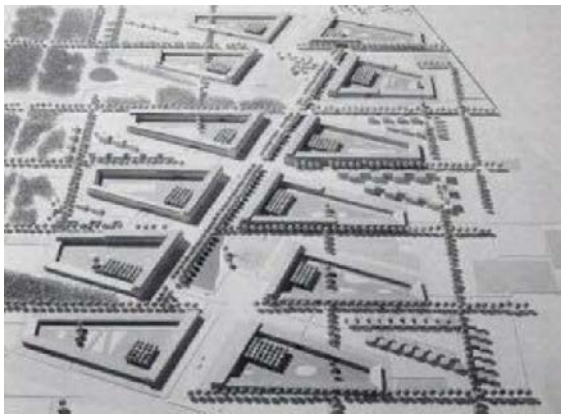


Figure 26: Elisabeth aue, Berlin-Pankow. 1995. Model. (Hertzberger,2005)

Figure 27, shows an example of urban design suggestion by Tavasoli (1990). In this design, identified public and private spaces, accessibility, and neighborhoods are important issues in urban design. In this example, the designer suggests creating semi-public spaces in between clusters of buildings and green areas as places for social interaction.

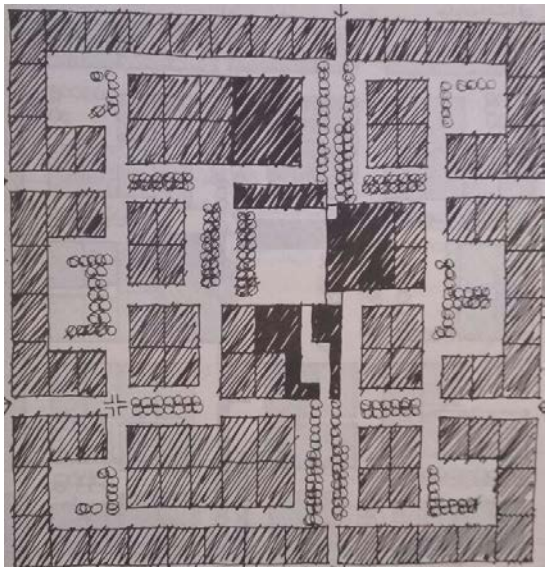


Figure 27: Urban plan suggested by Tavasoli. (Tavasoli,1990)

According to these examples, in the scale of refugee camps as urban settings well-organized spaces, whether closed or open, where large numbers of refugees can meet, may help them develop a sense of belonging and place attachment as citizens. Hence,

some suggestions for cluster organizations in refugee camps are proposed by the author in order to provide more defined semi-public spaces in between the shelters (Figure 28- Figure 29- Figure 30- Figure 31). Moreover, paying attention to spaces such as green spaces and in-between spaces (in public space and spaces between shelters) can create connection spaces for socialization.

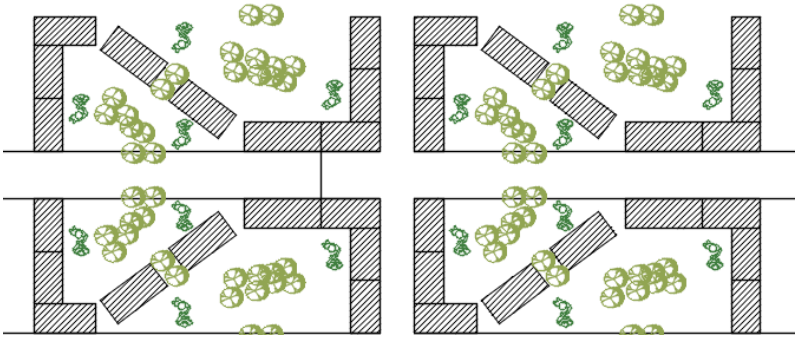


Figure 28: First suggestion for the refugee camps space organization, done by the author

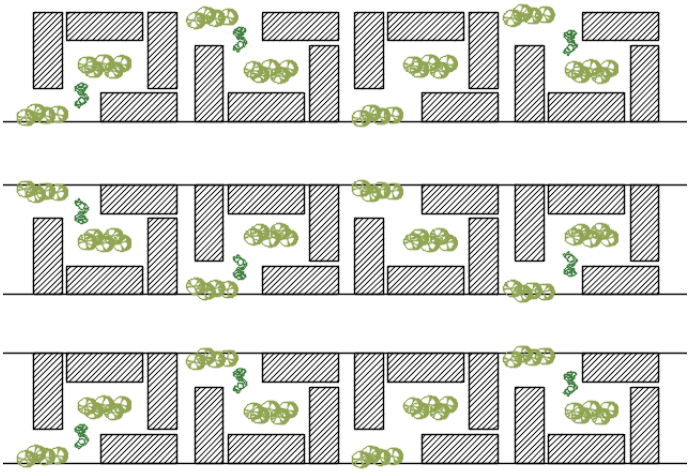


Figure 29: Second suggestion for the refugee camps space organization, done by the author

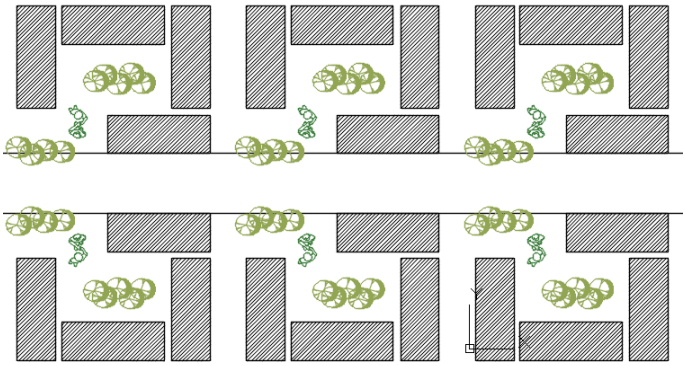


Figure 30: Third suggestion for the refugee camps space organization, done by the author

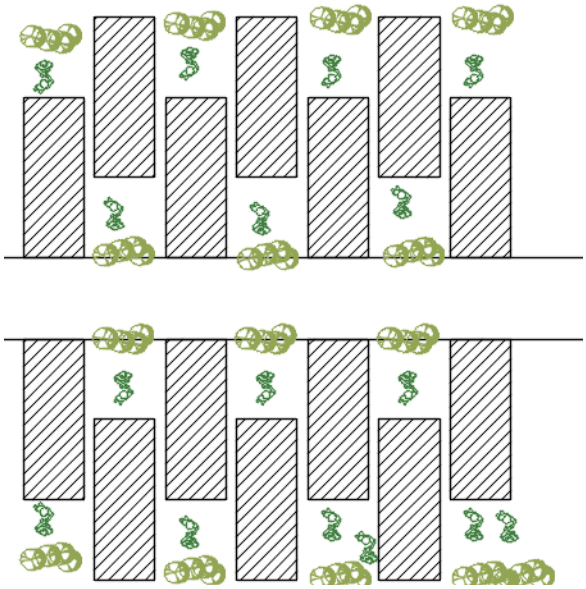


Figure 31: Fourth suggestion for the refugee camps space organization, done by the author

As a conclusion, in all urban settings, the collective spaces encourage a interaction among people. In this regard, Hertzberger (2005) mentions that:

> Important though this is, at least as Important for social life are the streets and squares, cafes, lobbies and other examples of collective spaces whose spatial setting has a catalytic effect on social contact, not just targeted at one and the same activity, but so that everyone can behave in accordance with their own intentions and movements and so be given the opportunity to seek out their own space in relation to others there (p.135).

Thinking about refugee camps as cities requires organizing the camp spaces in accordance with an urban space. This begins with a central space in a more or less

articulated form which the shelters for living are arranged around it. A crucial aspect here is that all internal roads should be confined to this central public space so that everyone keeps returning to it and the paths keep crossing. In addition, the streets and public spaces as spaces for interaction should be designed in a way that can invite refugees to meet and socialize.

Chapter 4

CASE STUDY TURKEY REFUGEE CAMPS

Today the world observes a group of approximately 60 million refugees which flee their home and country due to war. Even though there are currently more than thousands of refugee camps in forty countries to support refugees, more than half of them are still looking for a safe place to live which most of them are women and children (Herz, 2014).

Since the Syrian crisis began, the neighboring countries such as Jordan, Iran, Lebanon, and Turkey started hosting Syrian refugees. Turkey is estimated to host over two million Syrians and have constructed 22 refugee camps as temporary settlements. Now some refugees have been staying in camps for more than 5 years and the number of refugees is increasing every day.

To this end, as a case study of this research, 9 camps in Turkey have been selected to be analyzed and evaluated in relation to the quality of indoor and outdoor spaces as temporary settlements.

4.1 A Brief Overview on Case Study

Turkey is located at the northeast end of the Mediterranean Sea in southwest Asia (Figure 32). It is bordered by Greece and Bulgaria in the west; Russia, Ukraine, Romania in the north, Georgia, Armenia, Azerbaijan at the northwest; Iran in the east, and **Syria** and Iraq in the south (AFAD, 2016).

Figure 32: Turkey location due to borders. (AFAD, 2016)

Due to the ongoing conflicts involving the government of Syria beginning in 2011, more than 4 million Syrian people were forced to flee their homes and have fled to neighboring countries to find security, dignity and hope (AFAD, 2016).

From the beginning of the Syrian Civil War, in more than four years Turkey has accepted approximately 2.5 million Syrians with different religious and ethnic backgrounds. They are living in Turkey in refugee camps and urban settlements. The high number of refugees which now makes Turkey the largest refugee hosting country in the world, is an enormous challenge to Turkey's infrastructure (AFAD, 2016).

In order to provide shelters and camps for Syrian displaced people, AFAD has established 26 TPC (Temporary Protection Centers) camps in 10 provinces especially near the Syrian border (Figure 33) (AFAD, 2016).

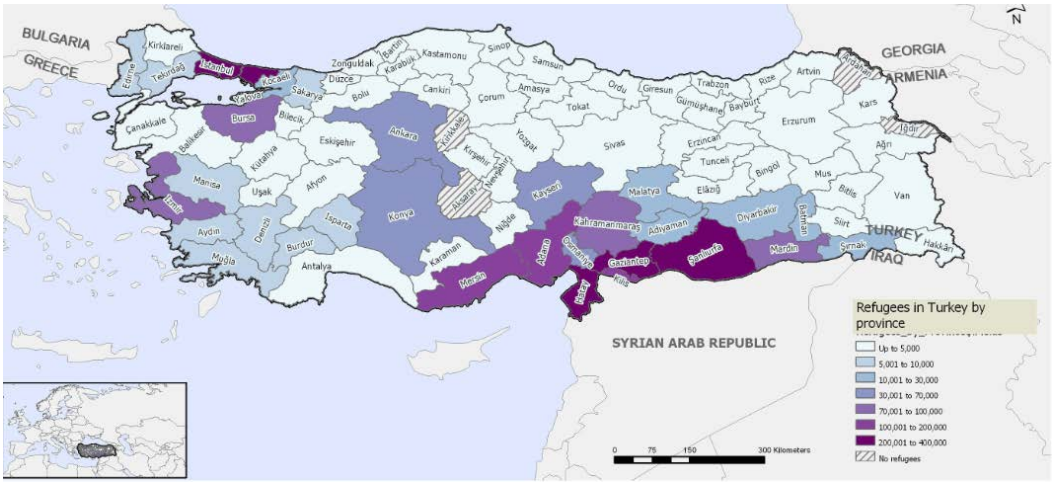


Figure 33: Distribution of Syrian refugees in Turkey by Provinces. (UNHCR,2015)

Table 12 demonstrates the lists of these camps and the number and kind of shelters provided.

Table 12: Refugee camps in Turkey. (AFAD,2016)

PROVINCE	TEMPORARY PROTECTION CENTERS (TPCs)	SET UP		PRESENT IN TPC	TOTAL
HATAY	Altınözü 1 Tent TPC	263	tents	1.374	**18.513**
	Altınözü 2 Tent TPC	680	tents	3.143	
	Yayladağı 1 Tent TPC	544	tents	2.794	
	Yayladağı 2 Container TPC	776	containers	3.411	
	Apaydın Container TPC	1.181	containers	4.849	
	Güveççi Tent TPC	1.000	tents	2.942	
GAZİANTEP	İslahiye 1 Tent TPC	1.586	tents	7.516	**38.293**
	İslahiye 2 Tent TPC	4.520	tents	8.650	
	Karkamış Tent TPC	1.678	tents	7.097	
	Nizip Tent TPC	1.873	tents	10.306	
	Nizip Container TPC	908	containers	4.724	
ŞANLIURFA	Ceylanpınar Tent TPC	4.551	tents	21.727	**102.215**
	Akçakale Tent TPC	5.129	tents	29.494	
	Harran Container TPC	2.000	containers	13.632	

	Viranşehir Tent TPC	3.938	tents	16.461	
	Suruç Tent TPC	7.028	tents	20.901	
KİLİS	Öncüpınar Container TPC	3.184	containers	9.438	**31.305**
	Elbeyli Beşiriye Container TPC	3.592	containers	21.867	
MARDİN	Midyat Tent TPC	1.335	tents	2.862	**8.972**
	Nusaybin Tent TPC	2.700	tents	0	
	Derik Tent TPC	2.700	tents	6.110	
KAHRAMANMARAŞ	Merkez Tent TPC	3.763	tents	18.428	**18.428**
OSMANİYE	Cevdetiye Tent TPC	2.012	tents	9.036	**9.036**
ADIYAMAN	Merkez Tent TPC	2.302	tents	9.822	**9.822**
ADANA	Sarıçam Tent TPC	2.141	tents	10.298	**10.298**
MALATYA	Beydağı Container TPC	1.980	containers	7.599	**7.599**

Due to huge number of refugees in Turkey, AFAD works with the local government to provide a secure space and to fulfil humanitarian needs of Syrian refugees.

> We provide accommodation, food, health, education and other humanitarian needs as much as possible. We mobilize all our resources and capabilities to provide for the needs of those people, in a sense of responsibility as a member of the international community… Within the scope of this system, the educational activities are provided by the Ministry of National Education; healthcare services are offered by the Ministry of Health; security activities are carried out by the Ministry of Interior and other services are coordinated by relevant ministries and local authorities. Turkey does not only provide temporary protection for Syrians in Turkey, but also prepares them for the post-crisis period (AFAD,2016).

In this regard, it should be noticed that according to Global Humanitarian Assistance Report 2016, Turkey is the most generous donor country and is trying to do more than its share in alleviating the suffering of Syrian refugees.

4.2 Methodology of Assessment and Analysis of Case Studies

This study aims to analyze and evaluate the refugee camps in two perspectives, the first is the quality of shelters as indoor spaces and the second part is the quality of outdoor spaces of camps as both of them impact on the quality of life due to the refugees' situation. In general, the methodology of this study is qualitative, based on formal analysis of maps and photos which are provided by UNHCR, AFAD, IFRC, etc. The analysis of collected data is done on important dimensions which are the quality of spaces and organization of camps.

As mentioned before, Turkey hosts Syrian refugees in 26 refugee camps in 10 provinces. All of these camps have been researched. Some of them are as big as cities like Akçakale camp with 29494 population and some of them are like a small village such as Midyat camp with 2862 population. All of these camps are hosting Syrian and Iraqi refugees who fled from their home due to the war and conflicts. However, because of the national security reasons there is not enough information about all of the camps for analyzing. Several mails have been sent to UNHCR and AFAD but unfortunately the required permissions for the site observations were not obtained and it was not possible to go to the camps and have observation or interviews. Hence, from the overview of 26 refugee camps, as the necessary information for evaluation was available for 9 refugee camps, they have been chosen to be studied (Altınözü 1& Altınözü 2 camps, Yayladağı 1 & Yayladağı 2 camps, Apaydın camp, İslahiye 1& İslahiye 2 camps, Nizip 1 & Nizip 2 camps). Moreover, some of these camps such as Altınözü 1& Altınözü 2 camps and İslahiye 1& İslahiye 2 camps are located in the same land but for better directory services they are divided in two parts. All of these camps are visited by UNHCR members, journalists, etc. Therefore, the photos and

maps that are provided by them together with the information provided by the relevant sites formed a base for this research. These camps have not been previously studied in this perspective so this research aims to develop suggestions related to how these camps can be arranged to provide better quality of shared public spaces and more sustainable social relationships.

An inductive approach was selected to understand the quality of indoor and outdoor spaces and the organization of refugee camps which have impact on refugee's behaviors and daily activities in camps. Therefore, in order to analyze and evaluate the quality of spaces in refugee camps, each case is evaluated in three main sections. The first part describes the condition of camp, in the second part the quality of shelters and in the third the quality of camp as exterior space is investigated (Figure 31). The cornet condition of camps has been dealt with to understand geographical situation, number of refugees and shelters, and different facilities and services in camps. In the second part, the quality of shelters as interior spaces is analyzed to explore possible solutions for increasing the quality of life in temporary shelters in refugee situation. The third section analyzes the quality of urban spaces and spatial organization in camps. Perhaps, there is connection with public functions such as services and facilities, activity spaces and social spaces which have an effect on refugee's behavior.

This study is based on formal analyzes and the evaluation is done according to criteria which were found in the literature survey part. In order to create an inclusive basis for the study, wide range of literature including books, articles, papers, and documents from relevant organizations such as UNHCR, IFRC and AFAD were reviewed which are covering environmental psychology, refugee shelters, refugee camp and space organization. Figure 34, summarizes the evaluation criteria in these parts.

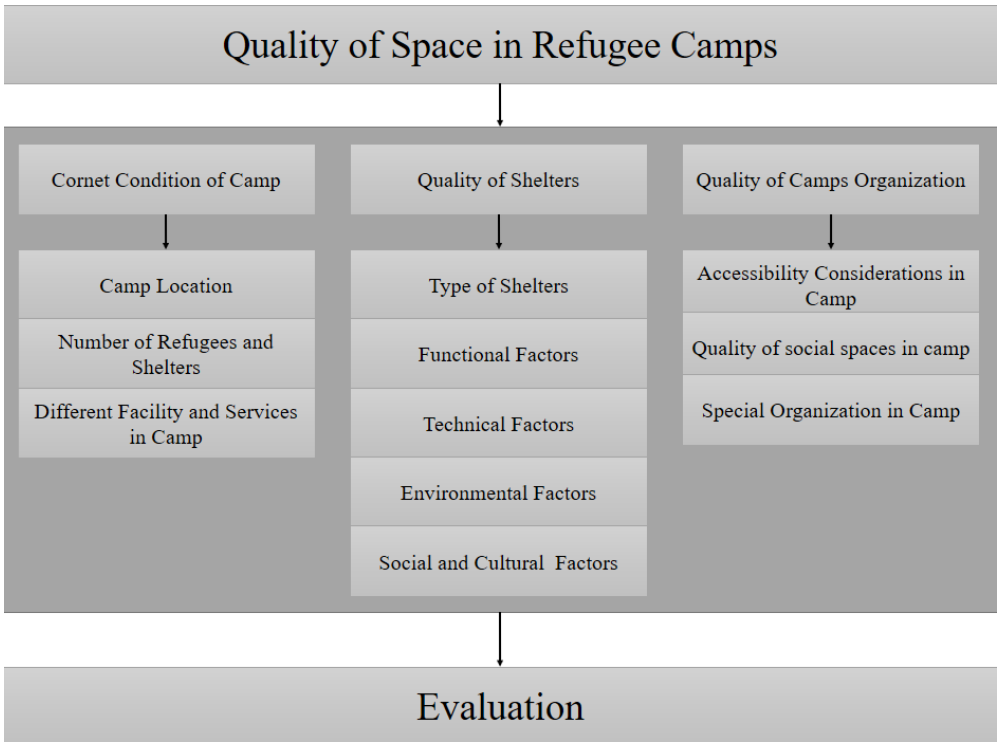


Figure 34: Scheme of case analysis.

4.3 Data Analysis of Case Studies

As was mentioned previously, in this research due to security reasons it was not possible for the author to observe the living spaces in refugee camps personally. Therefore, information provided here (maps, photos, documents) were collected from relevant agencies. This information has been used in the analysis and evaluation of cases studies.

In order to realize this analysis, the research has focused on essential dimensions which have an impact on quality of life and refugee's behaviors in camps such as space organization, public and private spaces, social spaces, in between spaces and personal spaces.

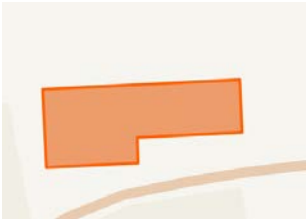
- **Case 1: Altınözü 1 and Altınözü 2 Camps**

Altınözü 1 and Altınözü 2 are located in the south-east of Hatay Province of Turkey, between Turkey and Syria, approximately 20 kilometers from the Syrian border (URL4).

"The people in Altınözü 1 and Altınözü 2 **camp** have fled in fear for their lives, and many told me they were distraught about the safety of loved ones still in Syria" (AFAD,2016)

Table below (Table 13) illustrates current condition of Altınözü 1 and Altınözü 2 camps.

Table 13: The current condition of Altınözü 1 and Altınözü 2 camps.

Altınözü 1 and Altınözü 2 camps Details			
Location		 Source: URL 1  Source: URL 2	Altınözü camps are located in south-east of Hatay Province of Turkey, between Turkey and Syria, approximately 20 kilometers from the Syrian border. According to large scale of camp this camp is divided to two parts: the Altınözü 1 and Altınözü 2 but both of them are in the same place and same condition.
Number of refugees		 Source: URL 3	There are approximately 1700 Syrians refugees right now living in these two camps which most of them are women and children.
Types and Number of		 Source: URL 4	These refugees live in about 943 Center Pole Tent which are provided by IFRC.
Activity Spaces	School	 Source: URL 5	There is a shelter that is used as school for children in different ages.
	Health center	 Source: URL 6	The health center is an important poblem for refugees which stay in this camps.

	Community Center and Administration Area	 Source: URL 4	The Community Center and Administration Area are located in front of the main entrance next to the main road.
	Playground	 Source: URL 4	The playground is located at the enf of the camp which is used for children.

Based on this information; and photos, maps and documents which are provided by UNHCR and AFAD, analyses of Altınözü 1 and Altınözü 2 shelters and camps are show in Table 14and Table 15.

Table 14: An analysis of shelters' quality in Altınözü 1 and Altınözü 2 Camps.

Analysis of The Quality of Shelters

Types of Shelters

Source: URL 16

Tent	Ridge Tent	
	Center Pole Tent	✓
	Frame Tent	
	Hoop Tent	
Indigenous		
Perfabric (container)		

Functional Factors

Source: URL 16

Standard size for family	×
Capability of Expansion	×

Technical Factors

Source: URL 16

Cosidering Climate Issue	×
Ventilation	×
Use Insulation Material	×
Ease of Storage	✓

Environmenl Factors

Source: URL 16

Environmental Friendly	✓
Safe in Wind	×
Safe in Flood	✓
Safe in Fire	×

Social and Cultural Factors

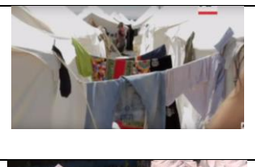
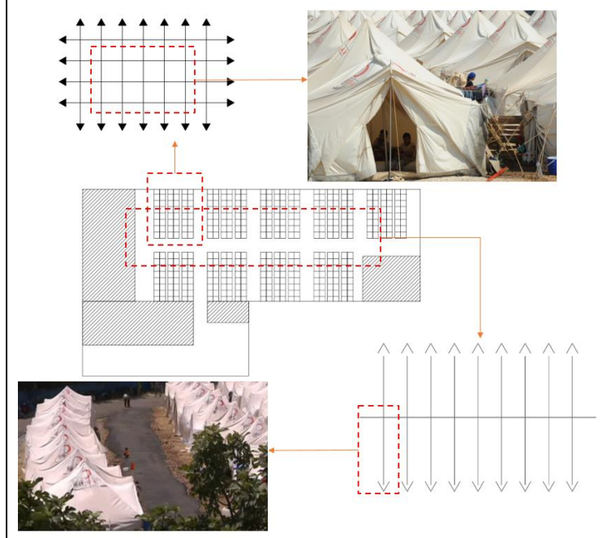
Source: URL4

Considering Different Cultures,Genders and Ages	×
Security	×
Privacy	×
Considering Communication Spaces	×

Note

- **Functional Factors:** Based on standard size of living space for each person (3.5 m^2), the size of shelters are not standard and shelters are too small for refugee families. Moreover, there is no space consideration of capability expansion.
- **Technical Factors:** As illustrate in photo, materials unappropriate acording to climate of camp's location are used and the ventilation of interior space of shelters is not considered.
- **Environmental Factors:** In risk of fire, there is not enough space between shelters and shelters are built on unstable foundations and piling for high wind.
- **Social and Cultural Factors: S**ocial and cultural issues are totally ignored in these shelters.

Table 15: Analysis of spatial organization in Altınözü 1 and Altınözü 2

<table>
<tr><th colspan="8">Analysis of The Quality of Camp</th></tr>
<tr>
<td rowspan="4">Accessibility Considerations in Camp</td>
<td rowspan="2"> 
Main road</td>
<td>Accesses to Main Road</td><td>✓</td>
<td rowspan="4">Quality of social spaces in camp</td>
<td>  </td>
<td colspan="2">Green Area</td><td>✓</td>
</tr>
<tr>
<td rowspan="2">  </td>
<td rowspan="2">Safe Internal Road</td><td rowspan="2">×</td>
<td rowspan="2">  </td>
<td rowspan="2">Public Spaces</td><td>Close</td><td>×</td>
</tr>
<tr>
<td rowspan="3">  </td>
<td>Open</td><td>✓</td>
</tr>
<tr>
<td rowspan="2">  </td>
<td rowspan="2">Semi-Private Spaces</td><td>Close</td><td>×</td>
</tr>
<tr>
<td rowspan="2">Safe Crossing and Path Way</td><td rowspan="2">×</td>
<td>Open</td><td>✓</td>
</tr>
<tr>
<td>  </td>
<td colspan="2">Well defined in between spaces</td><td>×</td>
<td rowspan="2">Spatial Organization in Camp</td>
<td rowspan="2">  </td>
<td rowspan="2">Linear
Grid
Cluster</td>
<td rowspan="2">✓
✓</td>
</tr>
<tr>
<td>  </td>
<td colspan="2">Considering street blocks</td><td>×</td>
</tr>
<tr>
<td>Note</td>
<td colspan="7">

Accessibility Considerations in the Camp: Although camp has a suitable access to the main road at the outside of the camp, providing the safe internal road and crossing and path way are ignored in designing this camp.
Quality of social spaces in the camp: Provision of social spaces and connection spaces is largely ignored in this camp. In front of the main entrance of the camp there are some trees and benches which are used as Green Area, open social space and semi-private spaces for refugees. For large scale of camp and due to the number of refugees this area is too small. However, for security and better accessibility of all refugees, center of camp can be more functional for creating social spaces.
Spatial Organization in the Camp: The general organization of the camp is based on Linear system. Although Linear organization provide direction path and movement but in refugee situation providing gathering spaces and public spaces is more important. The lack of in between spaces and gathering spaces is the most important problem of organization of this camp. In this case, Grid organization is also used as arranging shelters in each section. This type of space organization can be used for organizing a series of shelters, but it provides little opportunity for creating social spaces and community cluster for refugees.

</td>
</tr>
</table>

Case 2: Yayladağı 1 and Yayladağı 2 Camps

Yayladaği camps, are located in Hatay province, southern Turkey in the grounds of a former tobacco processing factory. AFAD set up these camps in May 2011 for Syrian which fled their country because of war. The shelter types used in Yayladagi camps are tent (Yayladagi 1) and containers (Yayladagi 2). Every shelter boasts a TV satellite and electricity, lights, heater, and refrigerator (URL 4).

Table below (Table 16) illustrates current condition of Yayladağı 1 and Yayladağı 2 camps.

Table 16: The current condition of Yayladağı 1 and Yayladağı 2 Camps.

<table>
<tr><th colspan="4">Yayladağı 1 and Yayladağı 2 Camps Details</th></tr>
<tr><td>Location</td><td colspan="2"> 

Source: URL 7
 

Source: URL 8</td><td>Yayladagi camps, are located in southern Turkey on the grounds of a former tobacco processing factory.</td></tr>
<tr><td>Number of Refugees</td><td colspan="2"> 
Source: 9</td><td>Based on AFAD reports, there are approximately 2794 Syrian refugees in Yayladağı 1 and 3411 Syrian refugees in Yayladağı 2.</td></tr>
<tr><td>Number of shelter</td><td>Yayladağı 1</td><td> 
Source: URL 9</td><td>The number of shelters in these two camps is about 1320.</td></tr>
</table>

	Yayladağı 2	 Source: URL 10	Right now, there are 544 of center pole tents in Yayladağı 1 and 776 containers in Yayladağı 2.
Functional Requirments	Hygionic	 Source: URL 12	Ther is no provision for Waste disposal in each section of camp.
	Illumination	 Source: URL 13	Both camps have acsses to the TV satelite and electricity.
	Safety and Security	 Source: URL 13	There is not enoght security and safety in border of camp, specially for children.
Economic activity	Small Camp Business	 Source: URL 13	One shelter is allocated for women, as small business place.

Activity Spaces	School	  Source: URL 13	In both camps some shelters are used for educational facilities in different levels.
	Health center	 Source: URL 13	The lack of appropriate space for health center and health facilities is a big problem for both camps.
	Community Center and Administration Area	 Source: URL 13	Considering a building for Community Center and administration at the end of both camps.
	Sport Center and Plaground	  Source: URL 18	A small playground and sport facilities is considered at the center of the camps next to the shelters.

Based on this information, photos, maps and documents which are provided by UNHCR and AFAD, analyses and evaluation of Yayladağı 1 and Yayladağı 2 shelters and camps are shown in Table 17, Table 18 and Table 19.

Table 17: An analysis of shelters' quality in Yayladağı 1 and Yayladağı 2

Analysis of The Quality of Shelter

Types of Shelters

Source: URL16

Source: URL 10

Tent	Ridge Tent	
	Center Pole Tent	✓
	Frame Tent	
	Hoop Tent	
Indigenous		
Perfabric (container)		✓

Functional Factors

Source: URL 12

Standard size for family	×
Capability of Expansion	×

Technical Factors

Source: URL 16

Cosidering Climate Issue	×
Ventilation	×
Use Insulation Material	×
Ease of Storage	✓

Environmenl Factors

Source: URL 17

Environmental Friendly	✓
Safe in Wind	×
Safe in Flood	✓
Safe in Fire	×

Social and Cultural Factors

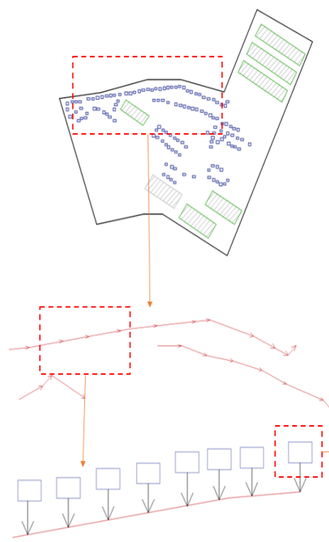
Source: URL4

Considering Different Cultures,Genders and Ages	×
Security	×
Privacy	×
Considering Communication Spaces	×

Note

- **Functional Factors:** In both camps, the size of tents and containers are not standard and shelters are too small for refugee families. In additon, based on organization of shelters, there is no space for expanding shelters in the future.
- **Technical Factors:** As illustrated in photos, tents are not appropriate for the climate of Turkey but all the tents and also containers have heaters for winter monthy.
- **Environmental Factors:** As mentioned before, there is not standard space between shelters for controlling fire risk; also, tents in Yayladağı 1 are not strong enough against high wind.
- **Social and Cultural Factors:** Although, every shelter boasts a TV satellite and an electricity, lights, heater, and refrigerator, the lack of private and individual space is observed in these camps.

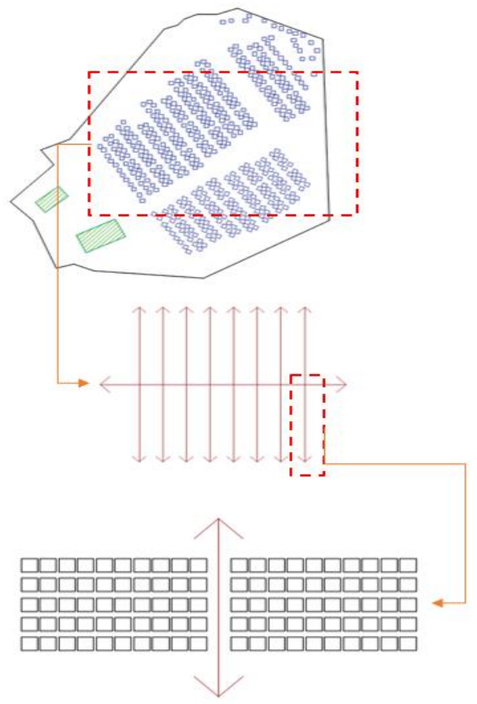
Table 18: Analysis of spatial organization in Yayladağı 1 Camp.

<table>
<tr><th colspan="11">Analysis of The Camp Quality of Camp</th></tr>
<tr>
<td rowspan="4">Accessibility Considerations in Camp</td>
<td rowspan="2">  </td>
<td>Accesses to Main Road</td><td>✓</td>
<td rowspan="4">Quality of social spaces in camp</td>
<td rowspan="2">  </td>
<td colspan="2">Green Area</td><td>✓</td>
<td rowspan="4">Spatial Organization in Camp</td>
<td rowspan="2">  </td>
<td>Linear</td><td>✓</td>
</tr>
<tr>
<td rowspan="2">  </td>
<td rowspan="2">  </td>
<td rowspan="2">Public Spaces</td><td>Close</td><td>×</td>
<td rowspan="3">Grid</td><td rowspan="3"></td>
</tr>
<tr>
<td>Safe Internal Road</td><td>×</td>
<td>Open</td><td>✓</td>
</tr>
<tr>
<td rowspan="2">Safe Crossing and Path Way</td><td rowspan="2">×</td>
<td rowspan="2">  </td>
<td rowspan="2">Semi-Private Spaces</td><td>Close</td><td>×</td>
</tr>
<tr>
<td>  </td>
<td>Open</td><td>×</td>
<td>Well defined in between spaces</td><td>×</td>
<td rowspan="2">Cluster</td><td rowspan="2"></td>
</tr>
<tr>
<td colspan="3"></td>
<td colspan="3">Considering street blocks</td><td>×</td>
</tr>
<tr>
<td>Note</td>
<td colspan="10">

Accessibility Considerations in Camp: Yayladağı 1 has an access to the main road out of the camp, but internal road and crossing and path ways are not appropriate in this camp.
Quality of social spaces in camp: Lack of social spaces and connection spaces is obvious in Yayladağı 1. According to the location of the camp there are a lot of green spaces in the camp but unfortunately there are not in use.
Special Organization in Camp: The spatial space organization of the camp is based on Linear organization. In this case, linking and organizing the shelters along their length provide a long are direction path without any gathering spaces. The lack of in between spaces and gathering spaces is the most important problem of organization of this camp too.

</td>
</tr>
</table>

Table 19: Analysis of spatial organization in Yayladağı 2 Camp.

<table>
<tr><th colspan="9">Analysis of The Quality of Camp</th></tr>
<tr>
<td rowspan="3">Accessibility Considerations in Camp</td>
<td rowspan="2">  </td>
<td>Accesses to Main Road</td><td>✓</td>
<td rowspan="3">Quality of social spaces in camp</td>
<td rowspan="3">  </td>
<td colspan="2">Green Area</td><td>✓</td>
</tr>
<tr>
<td rowspan="2"></td>
<td>Safe Internal Road</td><td>✓</td>
<td rowspan="2">Public Spaces</td><td>Close</td><td>×</td>
</tr>
<tr>
<td>Safe Crossing and Path Way</td><td>×</td>
<td>Open</td><td>✓</td>
</tr>
<tr>
<td>Spatial Organization in Camp</td>
<td colspan="3">  </td>
<td rowspan="2">Semi-Private Spaces</td><td>Close</td><td>×</td>
<td>Linear</td><td>✓</td>
</tr>
<tr>
<td>Open</td><td>×</td>
<td>Grid</td><td></td>
</tr>
<tr>
<td>Note</td>
<td colspan="8">

Accessibility Considerations in the Camp: Yayladağı 2 has an indirect access to the main road out of the camp, but internal road and accessibility to different parts of the camp is considered.
Quality of social spaces in the camp: The old stucco tobacco warehouses at the end of the camp is reused as spaces for various activities and functions such as school, health center, laundry, etc. However, at the center of camp can be more functional for creating social spaces.
Spatial Organization in the Camp: Based on map and aerial photo of the camp, it can be noticed that the general space organization of the camp is based on Linear and Axial organization. Although a straight path can be the primary organizing element for a series of shelters, it provides little opportunity for creating social spaces and community cluster for refugees. Additionally, in organization of this camp there is no gathering space to speak of. The lack of in between spaces and gathering spaces is the most important problem of organization of this camp too.

</td>
</tr>
</table>

Case 3: Apaydın Camp

The Apaydın camp is located in the southern Hatay province about 8 kilometers away from the Syrian border. According to AFAD reports, about 4849 refugees are staying in the Apaydın camp where 80 percent are women and children; also amongst them there are Syrian generals, soldiers, police officers and public servants.

Table below (Table 20) illustrates current condition of Apaydın Camp.

Table 20: The current condition of Apaydın Camp.

Apaydın Camps Details		
Location	 Sourcw : URL 25	The Apaydın camp is located in the southern Hatay province about 8 kilometers away from the Syrian border.
Number of Refugees	There is not any photo available	Based on AFAD reports, there are approximately 4849 Syrian refugees in Apaydın camp. Syrian defectors and soldiers are accommodated at a camp separate from other refugees.

Number of shelter	 Source: URL 15	Right now, there are 1.181 containers in Apaydın camp.
Functional Requirments	There is not any photo and information available	
Economic activity	There is not any photo and information available	
Activity Spaces	There is not any photo and information available .	

As, Apaydın camp is hosting Syrian military defectors and soldiers, this camp has been closed off to the media for security reasons. Hence, quality of camp organization is done based on Google Earth maps. Analyses and evaluation of Apaydın camp shelters and camps are shown in Tables below (Table 21 and Table 22).

Table 21: An analysis of shelters' quality in Apaydin.

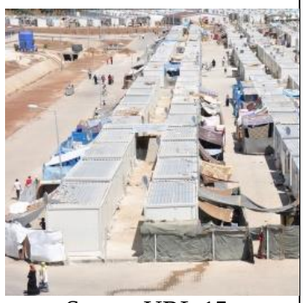
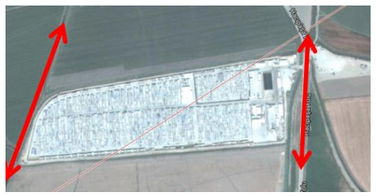
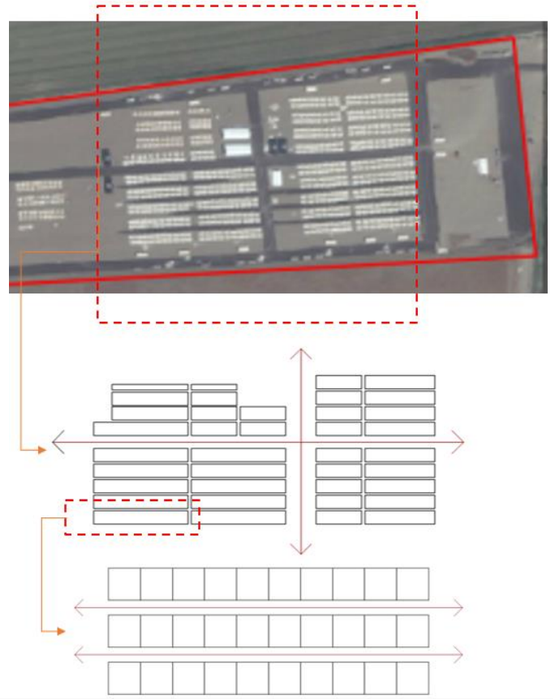
Analysis of The Quality of Shelter																	
Types of Shelters	 Source URL 15			**Functional Factors**	There is not any photo and information available			**Technical Factors**	There is not any photo and information available			**Environmenlal Factors**	There is not any photo and information available			**Social and Cultural Factors**	There is not any photo and information available	
	Tent	Ridge Tent			Standard size for family				Cosidering Climate Issue				Environmental Friendly				Considering Different Cultures,Genders and Ages	
		Center Pole Tent							Ventilation				Safe in Wind				Security	
		Frame Tent			Capability of Expansion				Use Insulation Material				Safe in Flood				Privacy	
		Hoop Tent							Ease of Storage				Safe in Fire				Considering Communication Spaces	
	Indigenous																	
	Perfabric (container)		✓															
Note																		

Table 22: Analysis of spatial organization in Apaydin Camp.

<table>
<tr><th colspan="11">Analysis of The Quality of Camp</th></tr>
<tr>
<td rowspan="3">Accessibility Considerations in Camp</td>
<td rowspan="3"> 
Source: googlemap.com
</td>
<td>Accesses to Main Road</td><td>✓</td>
<td rowspan="3">Quality of social spaces in camp</td>
<td rowspan="3">There is not any information</td>
<td colspan="2">Green Area</td><td></td>
<td rowspan="3">Special Organization in Camp</td>
<td rowspan="3">  </td>
</tr>
<tr>
<td>Safe Internal Road</td><td>✓</td>
<td rowspan="2">Public Spaces</td><td>Close</td><td></td>
</tr>
<tr>
<td rowspan="2">Safe Crossing and Path Way</td><td rowspan="2">×</td>
<td>Open</td><td></td>
</tr>
<tr>
<td rowspan="2">Semi-Private Spaces</td><td>Close</td><td></td>
<td rowspan="2">Linear
Grid
Cluster</td><td rowspan="2">✓
✓</td>
</tr>
<tr>
<td colspan="2">Open</td><td></td>
</tr>
<tr>
<td colspan="2"></td><td></td>
<td colspan="2">Well define in between spaces</td><td></td>
<td colspan="2"></td>
</tr>
<tr>
<td colspan="2"></td><td></td>
<td colspan="2">Considering street blocks</td><td></td>
<td colspan="2"></td>
</tr>
<tr>
<td>Note</td>
<td colspan="10">

Accessibility Considerations in the Camp: Apaydin camp has good access to the main road from two parts of the camp, but unfortunately internal roads and accessibility to different parts of the camp are ignored in this camp.
Spatial Organization in the Camp: Based on maps and aerial photos of the camp, the general organization of camp is based on grid system and linear organization is used for arranging containers in each section. Provision of social spaces and connection spaces is largely ignored in the organization in this camp. Introduction of informal public gathering spaces would allow more opportunity for interaction.

</td>
</tr>
</table>

Case 4: İslahiye 1 and İslahiye 2 Camps

İslahiye 1 and İslahiye 2 Camps are located in Gaziantep province in south-central Turkey near the Kurd Mountains, and the northwestern border of Syria (Kurdish town in the Turkish region of Kurdistan) (Figure 35). Because of its location and cultural bonds with border communities it has the largest concentration of Syrian refugees. In recent years, Islahiye hots many refugees which are fleeing the conflict in Syria and Iraq (URL20).

Figure 35: İslahiye 1 and İslahiye 2 Camps location. (URL 20)

Table below (Table 23) illustrates the current situation and facilities of İslahiye 1 and İslahiye 2 Camps.

Table 23: The current condition of İslahiye 1 and İslahiye 2 camps.

İslahiye 1 and İslahiye 2 Details		
Location	 Source: googlemap.com	İslahiye 1 and İslahiye 2 Camps are located at the northwestern border of Syria in Gaziantep province of Turkey.
Number of refugees	 Source: URL 22	There are approximately 17752 Syrians and Iraqis refugee right now living in these two camps.
Types and Number of shelters	 Source: URL 26	These refugees live in about 6106 Hoop Tent Tent and containers which are provided by AFAD.

Activity Spaces	School	  Source: URL 19	classroom tents are stablished in an abandoned warehouse at Islahiye camp.
	Markets	 Source: URL 21	There is a market in the center of the camp which is used for daily needs of refugees.
	Playground	 Source: URL 23	The playground is located at the end of the camp which is used for children.
Note			

Analyses and evaluation of İslahiye 1 and İslahiye 2 camps shelters and camps are shown in Tables below (Table 24 and Table 25).

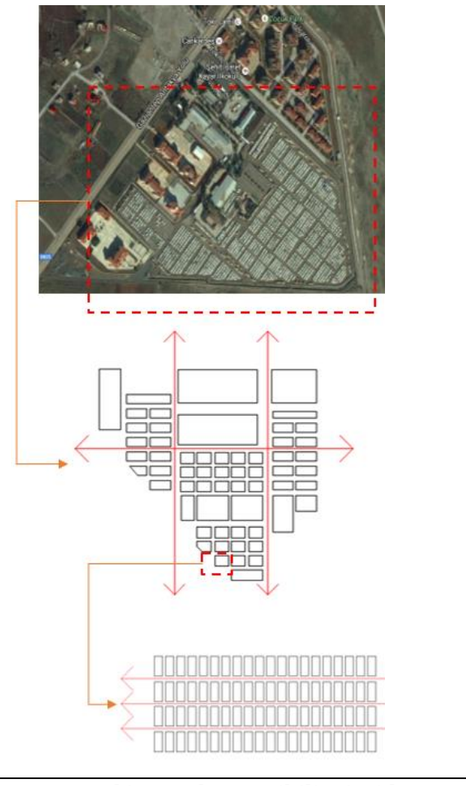
Table 24: An analysis of shelters' quality in İslahiye 1 and İslahiye 2

<table>
<tr><td colspan="11">Analysis of The Quality of Shelter</td></tr>
<tr>
<td rowspan="5">Types of Shelters</td>
<td colspan="3"> 
Source URL 21</td>
<td rowspan="5">Functional Factors</td>
<td colspan="2"> 
Source URL 21</td>
<td rowspan="5">Technical Factors</td>
<td colspan="2"> 
Source URL 21</td>
<td rowspan="5">Environmenl Factors</td>
<td colspan="2"> 
Source URL 21</td>
<td rowspan="5">Social and Cultural Factors</td>
<td colspan="2"> 
Source URL21</td>
</tr>
<tr>
<td rowspan="4">Tent</td><td>Ridge Tent</td><td></td>
<td rowspan="4">Standard size for family</td><td rowspan="4">✓</td>
<td>Cosidering Climate Issue</td><td>✓</td>
<td>Environmental Friendly</td><td>✓</td>
<td>Considering Different Cultures,Genders and Ages</td><td>×</td>
</tr>
<tr>
<td>Center Pole Tent</td><td></td>
<td>Ventilation</td><td>✓</td>
<td>Safe in Wind</td><td>×</td>
<td>Security</td><td>×</td>
</tr>
<tr>
<td>Frame Tent</td><td></td>
<td rowspan="3">Capability of Expansion</td><td rowspan="3">×</td>
<td>Use Insulation Material</td><td>×</td>
<td>Safe in Flood</td><td>✓</td>
<td>Privacy</td><td>×</td>
</tr>
<tr>
<td>Hoop Tent</td><td>✓</td>
<td>Ease of Storage</td><td>✓</td>
<td>Safe in Fire</td><td>✓</td>
<td>Considering Communication Spaces</td><td>✓</td>
</tr>
<tr>
<td colspan="2">Indigenous</td><td></td>
</tr>
<tr>
<td colspan="2">Perfabric (container)</td><td>✓</td>
</tr>
<tr>
<td>Note</td>
<td colspan="10">

Functional Factors: In both camps, the size of tents and containers are standard for refugee families; but, base on organization of shelter, there is no space for expansing shelters in future.
Technical Factors: As illustrate in photo, all tents have heater and window for heating in winter and ventilation but the material that is used for sheltering is not appropriate material for Turkey's climate.
Social and Cultural Factors: Although, every shelter boasts a TV satellite and an electricity, lights, heater, and refrigerator, the lack of private and individual space is observed in this camps.

</td>
</tr>
</table>

Table 25: An analysis of spatial organization in İslahiye 1 and İslahiye 2 Camps.

<table>
<tr><th colspan="8">Analysis of the Quality of Camp</th></tr>
<tr>
<td rowspan="4">Accessibility Considerations in Camp</td>
<td rowspan="4"> 
</td>
<td>Accesses to Main Road</td><td>✓</td>
<td rowspan="4">Quality of social spaces in camp</td>
<td colspan="2">Green Area</td><td>×</td>
</tr>
<tr>
<td>Safe Internal Road</td><td>✓</td>
<td rowspan="2">Public Spaces</td><td>Close</td><td>✓</td>
</tr>
<tr>
<td>Safe Crossing and Path Way</td><td>×</td>
<td>Open</td><td>✓</td>
</tr>
<tr>
<td colspan="2"></td>
<td rowspan="2">Semi-Private Spaces</td><td>Close</td><td>×</td>
</tr>
<tr>
<td colspan="2"></td>
<td>Open</td><td>×</td>
</tr>
<tr>
<td rowspan="3">Spatial Organization in Camp</td>
<td rowspan="3">  </td>
<td colspan="2">Well define in between spaces</td><td>×</td>
<td>Linear</td><td>✓</td>
</tr>
<tr>
<td colspan="2">Considering street blocks</td><td>×</td>
<td>Grid</td><td>✓</td>
</tr>
<tr>
<td colspan="3"></td>
<td>Cluster</td><td></td>
</tr>
<tr>
<td>Note</td>
<td colspan="7">

Accessibility Considerations in the Camp: İslahiye 1 and İslahiye 2 Camps have a direct access to the main road out of the camp, and internal accessibility inside a camp is provided.
Quality of social spaces in the camp: The lack of green area and semi-private area are observed in these two camps.
Spatial Organization in the Camp: Based on map and aerial photos, the camps have a grid organization with two-main accesses which create a central activity which is used for different functions. In this case the linear organization is also used for linking shelters in each community cluster. This type of organization of shelters provides, straight path without any gathering and in-between spaces for socialization. Hence, the lack of social space and semi-private spaces are important problem of organization in İslahiye camps.

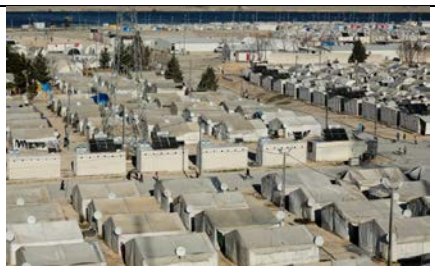
</td>
</tr>
</table>

Case 5: Nizip 1 and Nizip 2 Camps

Nizip camps are located in the province of Gaziantep, an important industrial city in eastern Turkey, 45 kilometers away from Syrian border. The pre-fabricated containers in Nazip 2 house 4,724 Syrian refugees who fled the destruction of civil war. Near Nizip 2 is Nizip 1, where 10,309 refugees are living in tents. Both camps are located into pieces of land on the banks of the Euphrates River (URL 24). Table 26 illustrates the current situation related to this camp.

Table 26: The current condition of Nizip1 and Nizip 2 camps.

Nizip1 and Nizip 2 camps analyses		
Location	 Source: google.map.com	Nizip Camps are located in Gaziantep, and next to the Syria border
Number of refugees	 Source URL 27	There are approximately 15030 Syrians refugees right now living in these two camps.

<table>
<tr><td rowspan="2">Types and Number of shelters</td><td colspan="2"> 
Source URL 28
 
Source URL 27</td><td rowspan="2">Refugees are living in about 2881 shelters. 1873 of them are tents and 908 are containers which are provided by AFAD.</td></tr>
<tr><td rowspan="2">Activity Spaces</td><td>School</td><td> 
Source URL 29</td><td rowspan="2">Both camps have school and education facilities for different ages.
These two camps have a londray and place for women to sell hand made staff.
Both camps have big centeral hospital with medical equipments.</td></tr>
<tr><td>Markets</td><td> 
Source URL 29</td></tr>
</table>

<table>
<tr><td rowspan="6"></td><td>Loundry</td><td> 

Source URL 29</td><td rowspan="6">Also have sport spaces and dining room for refugees.
classroom tents have been stablished in an abandoned warehouse in Islahiye camps.
There is a market in the center of the camp which is used for daily needs of refugees.</td></tr>
<tr><td>Room for women</td><td> 

Source URL 29</td></tr>
<tr><td>Hospital</td><td> 

Source URL 29</td></tr>
<tr><td>Sport space</td><td> 
</td></tr>
<tr><td>Dining space</td><td> 

Source URL 29</td></tr>
<tr><td>Note</td><td colspan="2"></td></tr>
</table>

Analyses and evaluation of Nizip1 and Nizip 2 shelters and camps are shown in Tables below (Tables 27-28-29-30).

Table 27: An analysis of shelter s' quality in Nazip 1 shelter.

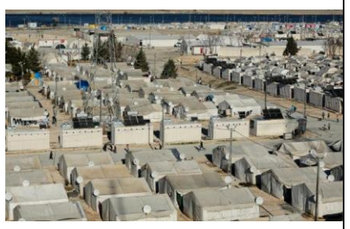
Analysis of The Quality of Shelter														
Types of Shelters				**Functional Factors**	There is not any information		**Technical Factors**	There is not any information		**Environmenl Factors**	There is not any information		**Social and Cultural Factors**	There is not any information	
	Tent	Ridge Tent			Standard size for family			Cosidering Climatic Issues			Environmental Friendly			Considering Different Cultures,Genders and Ages	
		Center Pole Tent													
		Frame Tent	✓					Ventilation			Safe in Wind			Security	
		Hoop Tent			Capability of Expansion										
	Indigenous							Use Insulation Material			Safe in Flood			Privacy	
	Perfabric (container)							Ease of Storage			Safe in Fire			Considering Communication Spaces	
Note															

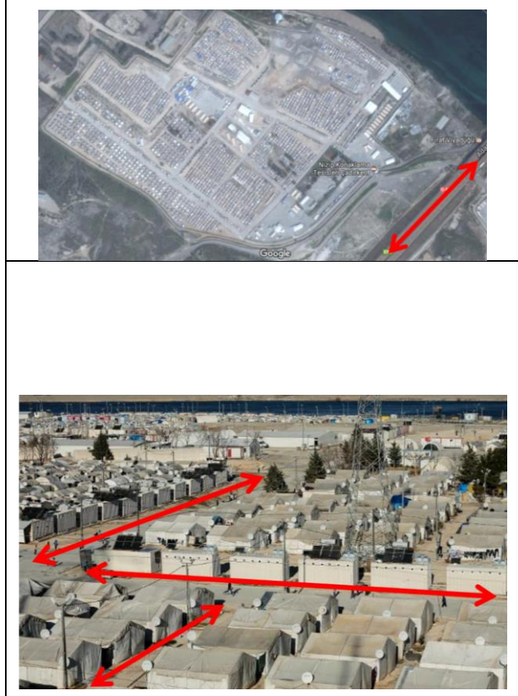
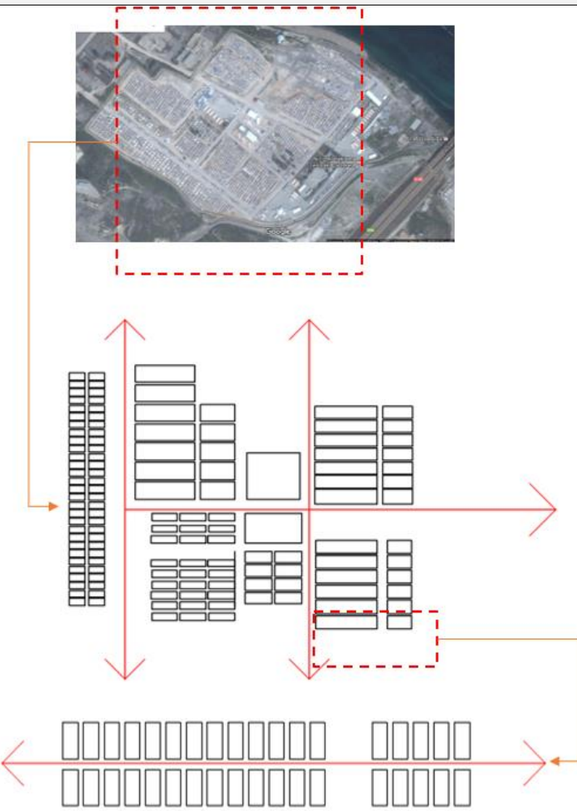
Table 28: An analysis of shelter s' quality in Nazip 2 shelter.

<table>
<tr><td colspan="11">Analysis of The Quality of Shelter</td></tr>
<tr>
<td rowspan="6">Types of Shelters</td>
<td colspan="3">  </td>
<td rowspan="6">Functional Factors</td>
<td colspan="2">  </td>
<td rowspan="6">Technical Factors</td>
<td colspan="2">  </td>
<td rowspan="6">Environmenl Factors</td>
<td colspan="2">  </td>
<td rowspan="6">Social and Cultural Factors</td>
<td colspan="2">  </td>
</tr>
<tr>
<td rowspan="4">Tent</td><td>Ridge Tent</td><td></td>
<td>Standard size for family</td><td>✓</td>
<td>Cosidering Climatic Issues</td><td>✓</td>
<td>Environmental Friendly</td><td>×</td>
<td>Considering Different Cultures,Genders and Ages</td><td>×</td>
</tr>
<tr>
<td>Center Pole Tent</td><td></td>
<td rowspan="3">Capability of Expansion</td><td rowspan="3">×</td>
<td>Ventilation</td><td>✓</td>
<td>Safe in Wind</td><td>✓</td>
<td>Security</td><td>✓</td>
</tr>
<tr>
<td>Frame Tent</td><td></td>
<td>Use Insulation Material</td><td>✓</td>
<td>Safe in Flood</td><td>✓</td>
<td>Privacy</td><td>✓</td>
</tr>
<tr>
<td>Hoop Tent</td><td></td>
<td>Ease of Storage</td><td>✓</td>
<td>Safe in Fire</td><td>×</td>
<td>Considering Communication Spaces</td><td>×</td>
</tr>
<tr>
<td colspan="2">Indigenous</td><td></td>
</tr>
<tr>
<td colspan="2">Perfabric (container)</td><td>✓</td>
</tr>
<tr>
<td>Note</td>
<td colspan="10">

Functional Factors: containers in Nizip 2 camp are appropriate in size and facilities for refugee families. But there is no consideration for future expansion.
Technical Factors: As illustrated in photos, containers are suitabable for the climate, and have insulation and ventilation.
Environmental Factors: There is not standard space between shelters for controlling fire risk; also, the construction of containers is not environmentally friendly.
Social and Cultural Factors: All containers have lock door facility for privacy and security of refugees. But the communication space and individual space as a quality of interior space are ignored in shelters of this camp.

</td>
</tr>
</table>

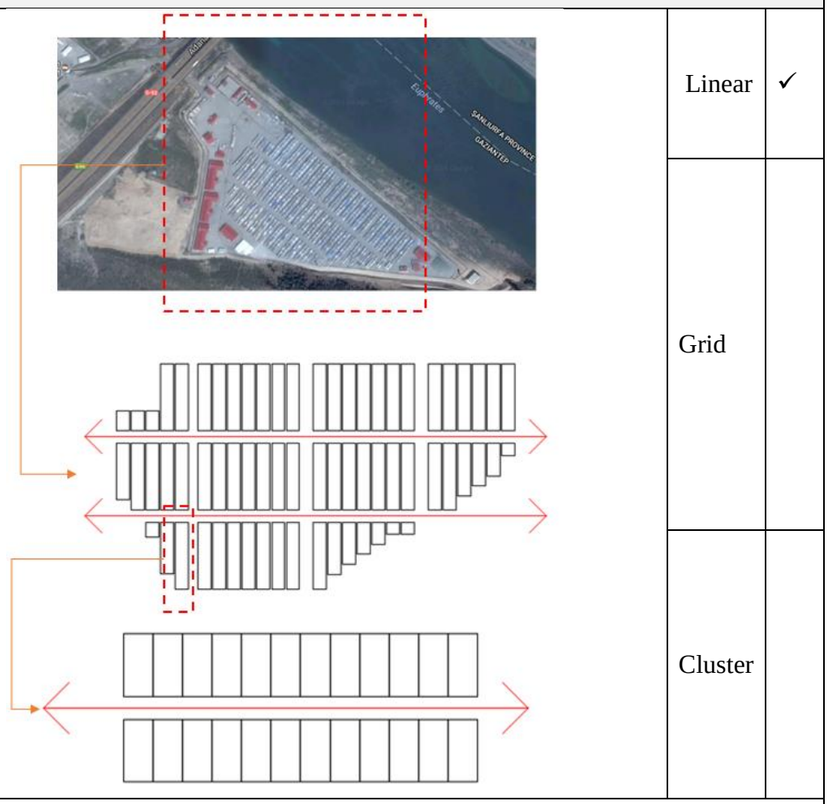
Table 29: An analysis of spatial organization in Nizip 1 Camp.

<table>
<tr><th colspan="8">Analyzes of The Quality of Camp</th></tr>
<tr>
<td rowspan="4">Accessibility Considerations in Camp</td>
<td rowspan="4">  </td>
<td>Accesses to Main Road</td><td>✓</td>
<td rowspan="4">Quality of social spaces in camp</td>
<td>Green Area</td><td></td><td>×</td>
<td rowspan="4">Spatial Organization in Camp</td>
<td rowspan="4">  </td>
<td>Linear</td><td>✓</td>
</tr>
<tr>
<td rowspan="2">Safe Internal Road</td><td rowspan="2">✓</td>
<td rowspan="2">Public Spaces</td><td>Close</td><td>✓</td>
<td rowspan="3">Grid</td><td rowspan="3">✓</td>
</tr>
<tr>
<td>Open</td><td>✓</td>
</tr>
<tr>
<td rowspan="2">Safe Crossing and Path Way</td><td rowspan="2">✓</td>
<td rowspan="2">Semi-Private Spaces</td><td>Close</td><td>×</td>
</tr>
<tr>
<td>Open</td><td>×</td>
<td>Well define in between spaces</td><td>×</td>
</tr>
<tr>
<td colspan="3"></td>
<td colspan="2">Considering street blocks</td><td>×</td>
<td>Cluster</td><td></td>
</tr>
<tr>
<td>Note</td>
<td colspan="10">

Accessibility Considerations in the Camp: camp has a well direct access to the main road and internal road inside the camp.
Quality of social spaces in the camp: The lack of green area and semi-private areas are observed in this camp. Also, same as all refugee camps there is no consideration of in-between space and street blocks in designing this camp.
Spatial Organization in the Camp: Based on map and aerial photos, the organization of the camp is based on a gird with two main accesses which create a central social space in their intersection. In different sectors and community clusters linear space organization is also used. Although, it has a good organization, there is no in-between space and social spaces for communities and sectors.

</td>
</tr>
</table>

Table 30: An analysis of spatial organization in Nizip 2 Camp.

<table>
<tr><th colspan="8">Analysis of The Quality of Camp</th></tr>
<tr>
<td rowspan="3">Accessibility Considerations in Camp</td>
<td rowspan="2">  </td>
<td>Accesses to Main Road</td><td>✓</td>
<td rowspan="3">Quality of social spaces in camp</td>
<td>Green Area</td><td>×</td>
<td rowspan="3">Spatial Organization in Camp</td>
<td rowspan="2">  </td>
</tr>
<tr>
<td rowspan="2">Safe Internal Road</td><td rowspan="2">✓</td>
<td rowspan="2">Public Spaces</td><td>Close</td><td>✓</td>
</tr>
<tr>
<td></td>
<td>Open</td><td>✓</td>
<td>Linear</td><td>✓</td>
</tr>
<tr>
<td rowspan="2"></td><td rowspan="2">Safe Crossing and Path Way</td><td rowspan="2">✓</td>
<td rowspan="2">Semi-Private Spaces</td><td>Close</td><td>×</td>
<td rowspan="2">Grid</td><td rowspan="2"></td>
</tr>
<tr>
<td></td><td>Open</td><td>×</td>
</tr>
<tr>
<td rowspan="2">Note</td>
<td rowspan="2" colspan="6">

Accessibility Considerations in the Camp: camp has a well direct access to the main road, but just have one main internal road.
Quality of social spaces in the camp: The lack of green area and semi-private area are observed in this camp. Also, same as all refugee camps there is no consideration of in-between spaces and street blocks in designing this camp.
Spatial Organization in the Camp: Based on map and aerial photos, the organization of the camp is based on a Linear order with a main access at the center. In organization of this camp the important of social space, in-between space for refugees are ignored.

</td>
<td>Well define in between spaces</td><td>×</td>
<td rowspan="2">Cluster</td><td rowspan="2"></td>
</tr>
<tr>
<td>Considering street blocks</td><td>×</td>
</tr>
</table>

4.4 Discussion

As has been mentioned in the introduction, an analyses and evaluation was conducted in order to reflect the current condition and search for the best solution to overcome the problems of quality of life in refugee camps. As can be seen in the AFAD interviews, most of the refugees consider the camps as temporary settlements, till they can return to their own countries. But right now, these camps are their home which they have been forced to live in. The results of analysis of quality of shelters are shown in Table below (Table 31).

Table 31: Results of quality of shelter analysis

Results of Quality of Shelters Analysis				
		Considering	Ignoring	No information
Types of Shelters	Tent	5		
	Indigenous	0		
	Perfabric (container)	4		
Functional Factors	Standard size for family	3	4	2
	Capability of Expansion	0	9	0
Technical Factors	Climate Issue	3	4	2
	Ventilation	3	4	2
	Use of Insulation Material	1	6	2
	Ease of Storage	9	0	0
Environmenlal Factors	Environmental Friendly	6	1	2
	Safe in Wind	1	6	2
	Safe in Flood	9	0	0
	Safe in Fire	2	6	2
Social and Cultural Factors	Considering Different Cultures,Genders and Ages	0	7	2
	Security	1	6	2
	Privacy	1	6	2
	Considering Communication Spaces	2	5	2

- **Types of Shelters**

According to analysis of shelters in all refugee camps in Turkey (Table 6), the results show that tents and containers as shelters are dominant in all camps. In this analysis, 19 camps use tent as shelter and in 7 camps prefabricated shelters (container) are used as temporary settlements. The living conditions in prefabricated shelters are more permanent than tents; that means refugees in containers can feel more at home.

Based on analysis of 9 refugee camps (Table 18), in 5 camps refugees live in tent and in 4 camps containers are used as shelter for refugees. Although, changing or modifying refugee shelters due to economic issues, is not always possible, designing internal spaces in tents and containers, with more privacy for different ages and genders can increase sense of home for refugees.

- **Functional Factors**

Average size of family unit is important factor in providing shelters for refugees. According to analysis in this context, the size of shelters in 3 camps are appropriate for families to live and size of shelters in 4 camps are too small for refugee families with 2 or 3 children with different ages and gender and there is not any information about situation of shelters in Apaydin and Nazip1 camps.

In this regard, due to the small size of family units and increasing number of families due to birth and the long time stay in camps, refugees need more spaces to expand their living area. But analysis show that, in all camps the idea of considering a space between shelters for expanding is ignored. The photos of camps illustrate that, refugees use the internal roads between two rows of shelters for expanding their units which has a negative impact on refugees specially children as it reduces the outside activity space between shelters.

- **Technical Factors**

As mentioned in previous chapters, shelters should protect people from different climatic conditions. Based on this fact, the result of analysis of 9 cases demonstrate

that, in 3 camps the climate issue is considered for providing shelters and shelters in 4 camps are not appropriate due to climate of the region; also, there is not any information about Nazip1 and Apaydin camps related to this factor.

Moreover, ventilation is an important factor that is related to health of refugees. The result of analysis of this factor shows that, in 3 camps ventilation is considered in the design of shelters for refugees and in 4 camps this issue is ignored. Although, providing all facilities in camps needs a lot of money, considering the facilities related to health of refugees specially children and older people is significant.

The next important issue that is analyzed in these cases is the appropriate ways of using insulation materials which is important to be considered in shelters. According to analysis, because of emergency situation of refugees, this factor is ignored in provided shelters in all cases except shelters in Nazip 2. Providing containers in Nazip 2 refugee camp, with considering all technical factors, give this opportunity to refugees to live in more comfortable living conditions than other camps.

In addition, ease of storage of shelters is another factor which is very important in setting up shelters. This issue is considered in all analyzed camps.

- **Environmenl Factors**

According to the fact that the sheltering program should concentrate on reducing environmental damage, 9 refugee camps are analyzed and results show that shelters in all camps are environmental friendly shelters except in Nazip 2 camp where concrete

is used for construction of containers. Concrete shelters are stronger against wind and flood. However, for temporary settlements is not suitable.

In addition, analysis of shelters show that, the factors which should be considered for safe structure in design in areas prone to high winds, flood and fire risk are ignored in all cases, except Nazip 2 camp.

- **Social and Cultural Factors**

Based on camps analysis, in all camps, the shelter services and facilities are enough to provide a basic living. On the other hand, in the shelters, privacy and security which give sense of home to them are ignored except in Nazip 2 camp. In designing containers in Nazip 2 camp, considering lockable door, give more sense of security and privacy to the refugees. (related to this factor, there are not any informantion about Apaydin and Nazip1 camps).

Moreover, the photos of refugee shelters show that, there is not any consideration of interior space design for different ages and genders. According to the fact that refugees generally live in the camps for more than five years, this is an important issue specially for yang girls and women to have some privacy spaces in shelters.

The next important issue in refugee camps is organization. “Refugee camps as reflecting temporary nature of refugee phenomenon are solution to accommodate new comers in short run” (Montclos & Kagwanja, 2000, p.205). Today, Turkey refugee camps can be considered as temporary cities between war and peace. In this regard, it

is important to consider the organization of the container or tent cities to have sufficient services and space for interaction between habitants. Unfortunately, it seems that organization of spaces in the camps in a way that allow creating a sense of city, neighborhood with diverse spatial qualities are ignored in all the camps. The results of analysis of quality of camps are shown in Table below (Table 32).

Table 32: Results of quality of camp analysis

Results of Quality of Camps Analysis				
		Considering	Ignoring	No information
Accessibility Considerations in Camps	Accesses to Main Road	8	1	-
	Safe Internal Road	6	3	-
	Safe Crossing and Path Way	2	7	-
Quality of social spaces in camps	Green Area	3	5	1
	Closed Public Spaces	4	4	1
	Open Public Spaces	8	0	1
	Closed Semi-Private Spaces	1	7	1
	Open Semi-Private Spaces	2	6	1
	Well defined in between spaces	1	8	1
	Considering street blocks	1	8	1
Spatial Organization in Camps	Linear	3	-	-
	Grid	-	-	-
	Cluster	-	-	-
	Liniear and Grid	6		

- **Accessibility Considerations in Camp**

According to the analysis closeness to the main road is an important factor for setting up the camps and results show that, all camps have close accesses to the main road

outside the camps except Altınözü 2. Close access to main road in the camp is a very significant factor when there is an emergency situation inside the camp. Moreover, in term of accessibility, safe internal roads and crossing path and ways inside a camp are important issues too. According to analysis, 6 camps have safe internal road and 3 camps do not have safe and secure internal roads. Also, crossing and path ways inside the camps between communities or sections are ignored in design of all camps except Nizip 1 which can be shown as a good case in refugee camps.

- **Quality of social spaces in camp**

As mentioned in pervious chapter, social spaces have significant effect on refugee health and behavior. The results of analyses in this issue demonstrate that, in 3 camps green areas are used as places for social interaction for refugees and 5 camps have no access to any green areas. According to the fact that green areas have direct effect on health, using trees or small green yard in front of the shelters can help to the recovery of psychological problems of refugees.

In addition, in term of public and private spaces all the camps have open public spaces but due to climate of Turkey, closed public spaces are also necessary which are considered in 4 camps and ignored in 4 camps. Also, semi-private spaces are ignored in urban design of all these refugee camps.

Another important issue in term of social spaces in refugee camps as small cities is the consideration of in-between spaces and street blokes. The results of analysis of all camps show that, this issues are totally ignored in plan of the refugee camps. In-

between spaces increase social interaction between refugees and street blocks can give refugees sense of belonging and attachment to the spaces. In this regard, due to psychological needs of refugees considering these spaces in camps is significant. (in analysis of this part there is not any information about Apaydin camp)

- **Spatial Organization in Camps**

Due to the emergency situation of refugees, in the camps, planners use the grid and linear organizations in order to arrange refugee shelters quickly and efficiently. Based on analysis, the organization of space in 3camps are done based on linear system without considering the importance of semi-private and in-between spaces and in 5 camps are done based on Linear and Grid system. Although, grid and linear planning have some positive effects such as creating streets of long and unimpeded nature, it also helps to create a road for commerce and trade, acting as the central business district in the camp, but it is not preferred for organization of camps. In planning of the camps, considering accessibility to different spaces is a very important issue which is ignored in all cases in Turkey. Considering the fact that, reorganizing the camps needs a lot of money and is not economical, appropriate organization of spaces at the first step of setting up the camps is more beneficial for both host country and refugees.

Chapter 5

CONCLUSION

Refugee camps are often organized based on the necessities related to dwelling, food, health, and emergency issues which are the basic considerations in zoning for a camp plan. Refugee camps as last life-saving spaces are essential human needs and these can be well organized spaces with friendly environments. The design program of a camp can supply the needs of a community at the spatial scale of a neighborhood, a village, or a small city in which the community is seen as a homogenous city.

Infrastructure, layout and type of shelter organizations in camps can have a considerable influence on feeling of safety, behavior, and well-being of refugees. Access and correct position of different sectors such as administration and security, health services, educational facilities, community services, social spaces, income-generating activities in camps must be taken into consideration in camps' organization.

Obviously economical, technical and functional issues in organization of refugee camps are of fundamental importance and should be considered too by the authorities responsible for these camps. For this reason, authorities involving in design of these shelters and camps, on one hand should consider the real basic needs of refugees, and try to get the maximum result with minimal environmental impact, and on the other

hand should design them in a way that allow them to develop proper social interactions.

Psychological and social welfare of the residents and increasing a sense of belonging and sense of community for refugees are significant issues as well. In this regards, relevant agencies should involve urban designers and architects to be helpful in creating more lively environments in these camps. Proposing social spaces, small parks or gardens, open public spaces with proper seating units for each community can help in developing healthy social interactions.

Moreover, considering urban elements such as squares, street names or colorful blocks can increase a sense of belonging and sense of community for the residents in these camps. Often though, these strategies and decisions for large scale camps on the level of organization can change an emergency and temporary relief, into permanent solution.

According to this research, well-defined in-between spaces and gathering spaces in refugee camps can directly have impacts on social behavior of refugees and increasing sense of belonging to them. Furthermore, considering the spaces for expansion between shelters can provide opportunity for the refugees to expand their living spaces and have more spaces when necessary. Also, these spaces between shelters can be used as communication spaces for neighbors.

Generally, the organization of shelters in camps are in linear and grid forms and that is why the in-between spaces are not well-defined and do not encourage much social interaction. If the organization of the shelters is done in the way that some spaces between shelters are defined as courtyards, they can act as semi-private spaces and people can accept them as places to sit, have chat, where children can play safely, etc.

Overall the "camp plan" should be suitable for the camp site, and surroundings environment. The camp plan should take into account the social and economic factors and should also cover the physical and psychological needs of refugees from different cultures, ages and genders.

Refugees have the same rights as all human beings, to live with freedom and dignity, to pursue a livelihood and to enjoy a good quality of life. Exactly as they had prior to the conflict, living in their cities and villages where they worked, studied and enjoyed life. Rethinking refugee camps with this perspective in mind might contribute to creating a brighter future for refugees and the hosting communities.

At the end, it is important to mention that, refugees are not people from another century. Like us, they have right to have a comfortable life. Architects and Urban designers can help to change refugees' lives for the better by participating in design of better shelters and camp sites. According to the fact that, reorganization of the camps after occupation needs much more time and money it is recommended that the proper organization of be concerned before setting up the camps.

Further studies in the camp sites which involve also the thoughts and real life experiences of the occupants in these sites can help to further clarify the subject.

REFERENCES

Agier, M. (2011). Managing the undesirables: Refugee camps and humanitarian government, trans. David Fernbach (Malden, MA: Polity, 2011),12.

Alahmed, H., Alaghbari, W. E., Ibrahim, R., & Salim, A. (2014). The influence of spatial design characteristics on low-rise residential neighborhoods in Basra city: Enhancing residents' social interaction.International Journal of Housing Markets and Analysis, 7(4), 559-585.

Al-Khatib I, Juba A, Kamal N, Hamed N, Hmeidan N, Massad S. 2003. Impact of housing conditions on the health of the people at al-Ama'ri refugee camp in the West Bank of Palestine. Int J Environ Health Res 13(4):315–326.

Allan, Diana., 2013. Refugees of the Revolution: Experiences of Palestinian Exile. Stanford University Press, Stanford

Alnsour, J., & Meaton, J. (2014). Housing conditions in Palestinian refugee camps, Jordan. Cities, 36, 65-73.

Arslan, H. (2007). Re-design, re-use and recycle of temporary houses. Building and environment, 42(1), 400-406.

Ashmore, J., Babister, E., Corsellis, T., Fowler, J., Kelman, I., McRobie, A., ... & Crawford, K. (2003). Diversity and adaptation of shelters in transitional settlements for IDPs in Afghanistan. Disasters, 27(4), 273-287.

Babister, E., & Kelman, I. (2002). The emergency shelter process with application to case studies in Macedonia and Afghanistan. Journal of Humanitarian Assistance, 2002, 1-65.

Badri, S. A., Asgary, A., Eftekhari, A. R., & Levy, J. (2006). Post-disaster resettlement, development and change: a case study of the 1990 Manjil earthquake in Iran. Disasters, 30(4), 451-468.

Bashawri, A., Garrity, S., & Moodley, K. (2014). An overview of the design of disaster relief shelters. Procedia Economics and Finance, 18, 924-931.

binti Omar, D., & binti Ibrahim, F. I. (2015). Human Interaction in Open Spaces. Procedia-Social and Behavioral Sciences, 201, 352-359.

Bradford, J. H. (2013). Explaining explanation: A critical review of John Levi Martin's the explanation of social action. Current Perspectives in Social Theory, 31, 309À332.

Brun C 2001 Reterritorializing the relationship between people and place in refugee studies Geografiska Annaler Series B: Human Geography 83 15–25

Buchanan, A., 1999. The internal legitimacy of humanitarian intervention. J. Political Philos. 7 (1), 71–87

Burls, A. 2007. People and Green Spaces: Promoting Public Health and Mental Well-Being Through Ecotherapy. *Journal of Public Mental Health* 6, 3: 24-39.

Children walk beside tents in a refugee camp in the Turkish border town of Yayladagi in Hatay province. (2011, June, 09). Retrieved from http://www.alamy.com/

Ching, F. D. (2014). *Architecture: Form, space, and order*. John Wiley & Sons.

Cockburn, P. (2015). Refugee crisis: Where are all these people coming from and why? Retrieved from http://www.independent.co.uk/

Crisp, J., & Jacobsen, K. (1998). Refugee camps reconsidered. Forced Migration Review, 3, 27-30.

Cronin, A. A., Shrestha, D., Cornier, N., Abdalla, F., Ezard, N., & Aramburu, C. (2008). A review of water and sanitation provision in refugee camps in association with selected health and nutrition indicators–the need for integrated service provision. Journal of water and health, 6(1), 1-13.

Davis, J., & Lambert, R. (2002). Engineering in emergencies. A practical guide for relief workers: Practical Action Publishing.

De Bruijn, B. (2009). The Living Conditions and Wellbeing of Refugees.

De Montclos, M. A. P., & Kagwanja, P. M. (2000). Refugee camps or cities? The socio-economic dynamics of the Dadaab and Kakuma camps in Northern Kenya. Journal of refugee studies, 13(2), 205-222.

Emmott, S. (1996). 'Dislocation', shelter, and crisis: Afghanistan's refugees and notions of home. Gender & Development, 4(1), 31-38.

Farah R. 2000. A report on the psychological effects of overcrowding in refugee camps in the West Bank and Gaza strip. (IDRC) April. Retrieved from http://www.arts.mcgill.ca/MEPP/PRRN/Farah.html/.

Feldman, I. (2015). What is a camp? Legitimate refugee lives in spaces of long-term displacement. Geoforum, 66, 244-252.

Filfil M. 1999. The housing environment and women's health: The case of Ramallah Al-Tahta. West Bank, Palestine. Institute of Community and Public Health, Birzeit University.

Ford, L. (2000). The spaces between buildings. JHU Press

Forouzandeh, A. J., Hosseini, M., & Sadeghzadeh, M. (2008). Guidelines for Design of Temporary Shelters After Earthquakes Based on Community Participation.

In 14th World Conference on Earthquake Engineering, Beijing, China, Oct (pp. 12-17).

Galanakis, M. (2015). Public Spaces for Youth? The Case of the Jane-Finch Neighborhood in Toronto. Space and Culture, 1206331215595731.

Gehl, J. (2011). Life between buildings: using public space. Island Press

Giacaman R. 1985. A profile of life and health in three Palestinian villages. West Bank, Palestine: Community Health Unit, Birzeit University.

Graham, D. (2015). Violence Has Forced 60 Million People from Their Homes. Retrieved from www.theatlantic.com/

Habib, R. R., Basma, S. H., & Yeretzian, J. S. (2006). Harboring illnesses: On the association between disease and living conditions in a Palestinian refugee camp in Lebanon. International journal of environmental health research, 16(2), 99-111.

Hagerty, B. M., & Williams, A. (1999). The effects of sense of belonging, social support, conflict, and loneliness on depression. Nursing research, 48(4), 215-219.

Hall, Edward Twitchell. 1966. The hidden dimension. 1st ed. Garden City, N.Y.: Doubleday

Harrell-Bond, B. (2000). Are refugee camps good for children. Distinguished Adjunct Professor Forced Migration and Refugee Studies American University in Cairo, p. p1-11,1020-7473

Health Council of the Netherlands. 2004. Nature and Health: The Influence of Nature on Social, Psychological and Physical Well-Being. Health Council of the Netherlands and RMNO, The Hague.

Hertzberger, H. (2000). Space and the architect: lessons in architecture 2(Vol. 2). 010 Publishers.

Hertzberger, H. (2005). Lessons for students in architecture (Vol. 1). 010 Publishers.

Herz, M. (2014). Refugee camps in Chad: planning strategies and the architect's involvement in the humanitarian dilema. Research Paper, (147).

Huang, L., & Long, E. (2015). Architecture and Planning Design Strategy of Post-Disaster Temporary Settlement with High Building Density——Analysis Based on the Questionnaire in Dujiangyan after Wenchuan Earthquake.Procedia Engineering, 121, 101-106.

IFRC & OCHA. (2015). Shelter after disaster. Retrieved from www.ifrc.org

IFRC, (2011). Shelter safety handbook Some important information on how to build safe. Retrieved from www.ifrc.org

IFRC. (2011). Transitional shelters. Retrieved from www.ifrc.org

IFRC. (2013). Post-disaster shelter. Retrieved from www.ifrc.org

International Organization for Migration 2012. Trasitional Shelter Guidelines. Switzerland: Shelter Centre. IRP & ISDR 2011. Guidance Note on Recovery Shelter. Japan: International Recovery Platform Secretariat. Johnson, C. 2007a. Impacts of prefabricated temporary housing after disasters: 1999 earthquakes in Turkey. Habitat International, 31, 36-52

Ishii, T., Ochi, S., Tsubokura, M., Kato, S., Tetsuda, T., Kato, J., ... & Tachiya, H. (2015). Physical performance deterioration of temporary housing residents after the Great East Japan Earthquake. Preventive Medicine Reports, 2, 916-919.

Jeff L. Jackson, R.S. (2009-2010). Development of Minimum Standards for Emergency Shelter Operation in Sharp County, Arkansas Principal; Adele Houghton Consulting 2205 N Lamar Blvd, Suite 211, Austin, TX 78705 713-201- 759

Johnson, C., Lizarralde, G., & Davidson, C. H. (2006). A system view of temporary housing projects in post -disaster reconstruction. Construction Management and Economics, 24(4), 367-378.

Kaplan, R. 1993. Urban Forestry and the Workplace. In: P.H. Gobster (ed.), Managing Urban and High-Use Recreation Settings. International Symposium on Society and Natural Resources. USDA Forest Service, St Paul MN, pp. 41-45.

Kılcı, F., Kara, B. Y., & Bozkaya, B. (2015). Locating temporary shelter areas after an earthquake: A case for Turkey. European Journal of Operational Research, 243(1), 323-332.

Knapp, J, (2015, August, 28). The stories of Nyarugusu Refugee Camp. Retrieved from http://cwsglobal.org/

Korpela, K. M. (1989). Place-identity as a product of environmental self-regulation. Journal of Environmental psychology, 9(3), 241-256.

Krause, N. 1987. Life Stress, Social Support, and Self-Esteem in An Elderly Population. Psychology and Aging 2, 4: 349-356.

Krause, N., and B.A. Shaw. 2000. Giving Social Support to Others, Socioeconomic Status, and Changes in Self-Esteem in Late Life. *The Journals of Gerontology*. Series B, Psychological Sciences and Social Sciences 55, 6: S323.

Lam, F. K. (2011). Simulating the Effect of Microclimate on Human Behavior in Small Urban Spaces.

Lefebvre, H. (1991). The production of space (Vol. 142). Blackwell: Oxford.

Lischer, Sarah Kenyon, 2006. Dangerous Sanctuaries: Refugee Camps, Civil War, and the Dilemmas of Humanitarian Aid. Cornell University Press

Loescher G and Milner J 2004 Protracted refugee situations and state and regional insecurity Conflict, Security & Development 4 3–20

Lori, J. R., & Boyle, J. S. (2015). Forced migration: Health and human rights issues among refugee populations. Nursing outlook, 63(1), 68-76.

Low, S. M., & Altman, I. (1992). Place attachment. In Place attachment (pp. 1-12). Springer US.

Luz, A. (2004). Places in-between: the transit (ional) locations of nomadic narratives. In International conference, Culture Nature Semiotics, Locations IV-Tartu, Estonia.

Madanipour, A. (2003). Public and private spaces of the city. Routledge.

Malkki L 1992 National geographic: the rooting of peoples and the territorializing of national identity among scholars and refugees Cultural Anthropology 7 24–44

Malkki L 1996 Speechless emissaries: refugees, humanitarianism, and dehistoricization Cultural Anthropology 11 377–404

Maller, C.J., C. Henderson-Wilson, M. Townsend. 2009. Rediscovering Nature in Everyday Settings: Or How to Create Healthy Environments and Healthy People. Ecohealth 6, 4: 553-56.

McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of community psychology*, 14(1), 6-23.

Mikulincer, M., Gillath, O., Halevy, V., Avihou, N., Avidan, S., & Eshkoli, N. (2001). Attachment theory and rections to others' needs: Evidence that activiation of the sense of attachment security promotes empathic responses. Journal of personality and social psychology, 81(6), 1205.

Mind for better mental health (n.d) Improving mental health support for refugee communities

NRC. (2008). The Camp Management Project. Retrieved from https://www.nrc.gov/

NRC. (2014). The Shelter Situation of Refugees from Syria in Neighboring Countries. Retrieved from https://www.nrc.gov/

Nyabera, E, (2004, March, 10). Shelter project lets Dadaab's refugees swap twigs for bricks. Retrieved from http://www.unhcr.org/

OCHA, T. (2004). A Guide to the Use and Logistics of Family Tents in Humanitarian Relief. Retrieved from http://www.unhcr.org/

Ojewska, N, (2016). Syrian refugees: 'We would not consider Europe'. Retrieved from http://www.aljazeera.com/

Oxfam, G. B. (2005). Transitional settlement: displaced populations. T. Corsellis, & A. Vitale (Eds.). Oxfam.

Paardekooper, B., De Jong, J. T. V. M., & Hermanns, J. M. A. (1999). The psychological impact of war and the refugee situation on South Sudanese children in refugee camps in Northern Uganda: an exploratory study. *Journal of child Psychology and Psychiatry*, 40(04), 529-536.

Pagonis, J, (2005, December ,21). UNHCR completes its post-tsunami shelter commitments in Sri Lanka. Retrieved from http://www.unhcr.org/

Pan American Health Organization. (2000). Natural disasters: Protecting the public's health (No. 575). Pan American Health Org.

Perkins, D. D., Meeks, J. W., & Taylor, R. B. (1992). The physical environment of street blocks and resident perceptions of crime and disorder: Implications for theory and measurement. *Journal of environmental psychology*, 12(1), 21-34.

Peters, K., Elands, B., & Buijs, A. (2010). Social interactions in urban parks: Stimulating social cohesion? Urban forestry & urban greening, 9(2), 93-100.