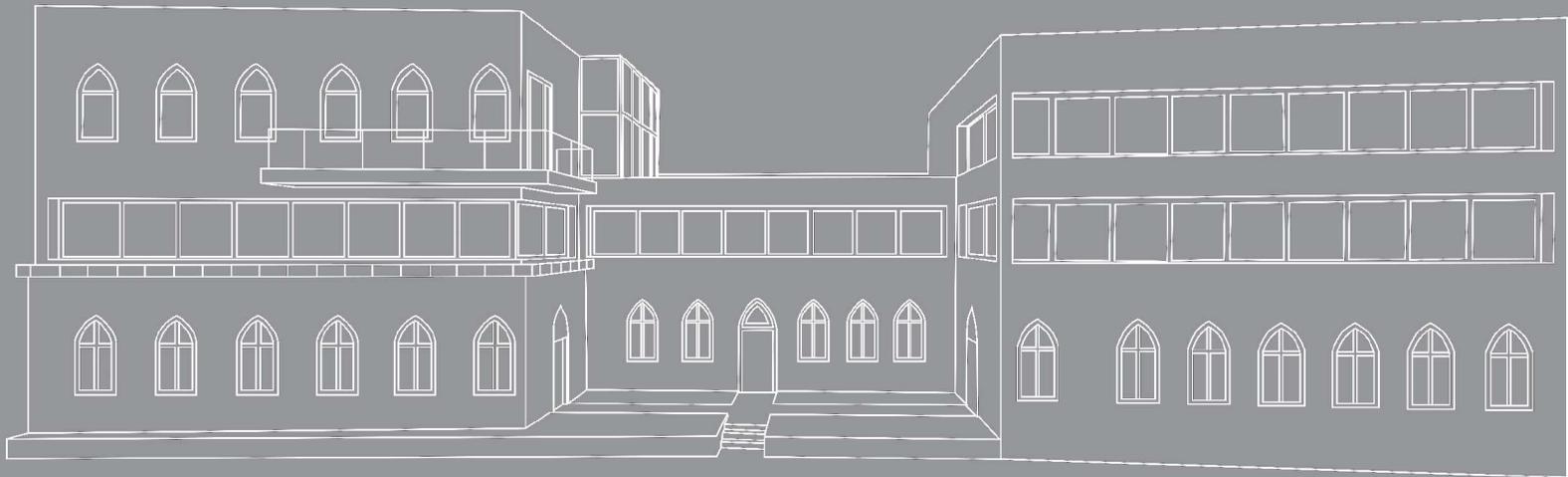




# UNION

## LONGTERM REFUGEE CITY

Written and designed by Rafa Barakat  
Under the supervision of Noah Resnick



Conceptual Union City Apartment Building Design, *Rafa Barakat*

# UNION

# INDEX

## Literature Review

# 1

<b>Introduction</b>	7
Abstract	7
<b>The United Nations</b>	8
What is the United Nations?	8
<b>Existing Transitional Settlements</b>	9
What is a Transitional Settlement?	9
Different types of Transitional Settlements	9
<b>Refugees, IDPs, and Resettlement</b>	11
Who are refugees and IDPs?	11
The first refugees and the origin of the word	12
75 years of major global refugee crises	12
The current condition in Syria	14

## Introduction to the Union

# 2

<b>Project Overview</b>	17
<b>Location</b>	18
Biggest Populations of Syrian Refugees	18
Kilis	19
Oruçlu	20

## Influential Cities

# 3

<b>Urban Principles</b>	23
Example Barcelona	23
Madinat Al-Salam, Baghdad	24
Garden City of To-Morrow	24

## Union Logistics

# 4

### Concepts and Principles

27

Restoring Humanity

27

Core Elements

28

### Phasing

31

Social Phasing

31

Construction Phasing

34

Home Ownership

34

## Feasibility

# 5

### Feasibility and Strategic Framework

39

Union as a Development

40

Finances

40

Three Ps

41

Strategic Framework

41

This is the Union

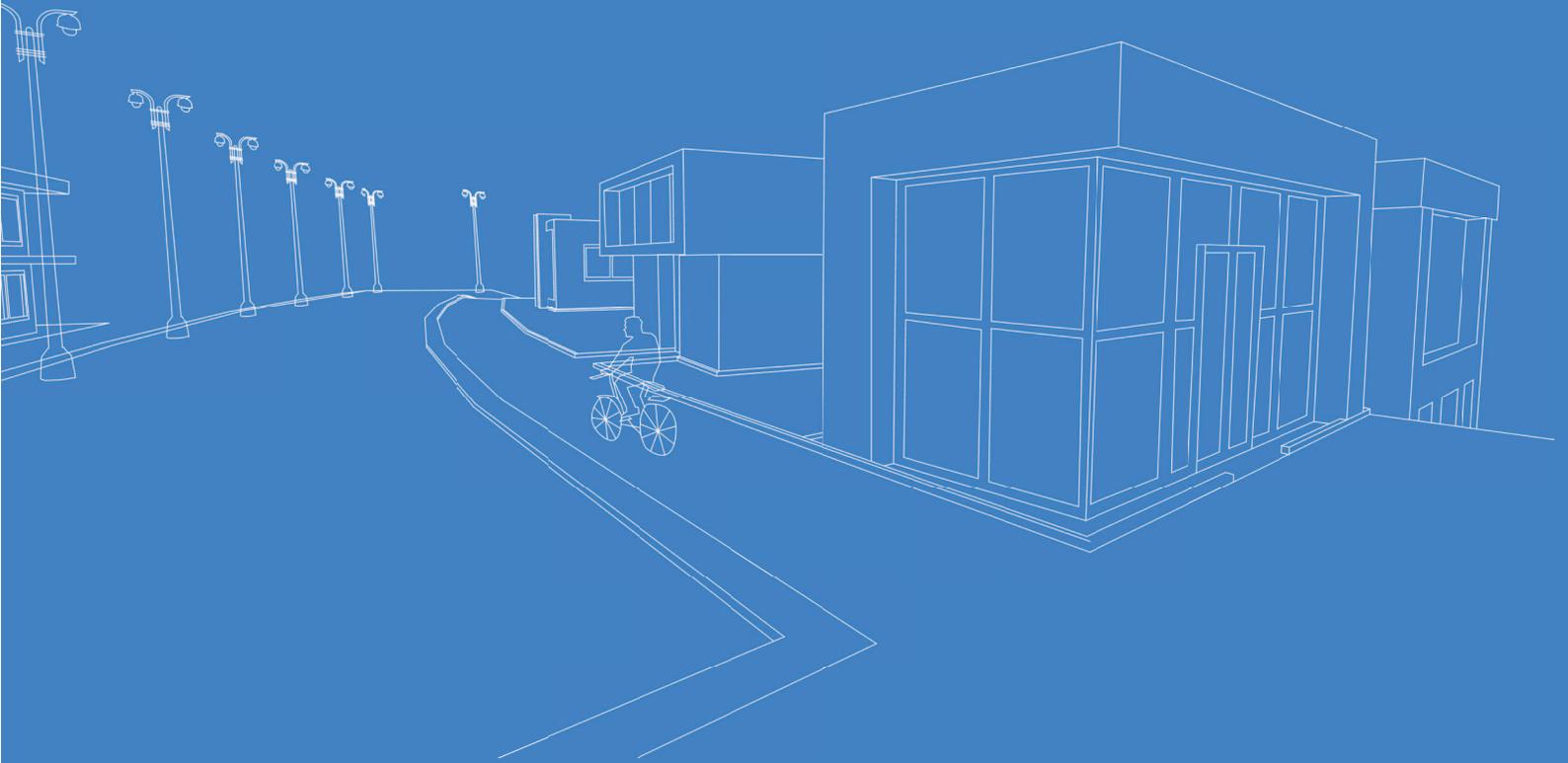
53

## Works Cited



Conceptual Union City Business District, *Rafa Barakat*

# LITERATURE REVIEW



Union City Conceptual Shops Scheme, *Rafa Barakat*

The past few years have had a global refugee crisis. Historical events have proven to produce more refugees than the current disasters. So why are we facing the most overwhelming refugee crisis today? It is because most refugees tend to linger even after crises such as war are resolved, so the cumulative population of refugees from over 75 years back is higher than ever before.

Refugees settle in concentration camps that are designed to be overpopulated in a very rapid manner to protect people from unanticipated emergencies like natural disasters and wars. Over a million refugees have gone through three generations in said concentration camps, yet we continue to fund refugee camps instead of raising money to build a more permanent home for the generations upon generations that call their host country home.

This thesis focuses on resettling Syrian refugees, currently residing in the Oncupinar Refugee Camp in Kilis, Turkey, to a more long-term city. [Providing the population with essentials to pursue a stable, proactive, and social life is the primary goal of this research.](#)

The research was conducted by studying different aspects of the crisis, from the history of refugees globally, to historic and modern city designs. The information and current situation and conditions provoked this thesis to consider possible solutions that the architectural industry could provide.

After completing thorough literature review on physical development, ranging from a larger urban context, to the more detailed and specific aspects of design elements and principles, in general, and for refugees in particular, a set of possible principles is provided that all feeds into a prototype city to test out the results of this research.



One of many Syrian Refugee Camps in Turkey, AP Photo



## What is the United Nations?

The United Nations (UN) is an intergovernmental organization. It was founded in 1945, only months after World War II ended, to minimize tensions and rivalry between the world's nations and their populations, and to prevent another such disaster (Sengupta).

The UN was first articulated by the Allied Big Four: the US, the UK, the Soviet Union, and China. However, by the time the first General Assembly meetings took place, 51 countries were represented. Today, there are over 193 nations participating (UNHCR, 9).

The UN's main goals, called charters, include, but are not limited to, providing equality between all people, regardless of race, gender, sexuality, etc., improving global health and living standards, maintaining economic progress and international relations, and most importantly, for this thesis, [aiding refugees](#) (Sengupta).



Social Progress &  
Better Living  
Standards



Human Rights



Economic  
Progress



International  
Relations

UN Charters, *Rafa Barakat*

In order to achieve set charters, the UN has five linked organizations. Each of those focuses on one

important aspect. One of these organizations is the [United Nations High Commissioner for Refugees \(UNHCR\)](#), which will be a primary resource for this thesis, as it obtains the most accurate and holistic data on anything that is related to the refugee crisis, which this thesis attempts to assist.

The UN's and the UNHCR's bylaws include one article each that allows the organization to obtain such accurate census.

Article 35 of the 1951 Convention mandates that [contracting states report to the United Nations](#) statistical information related to condition of refugees and the national laws relating to refugees (UNHCR).

The Statute of the Office of the High Commission, in paragraph 8(f), mandates [the UNHCR to obtain from governments](#) "information containing the number and conditions of refugees in their territories and the laws and regulations concerning them." (UNHCR)



UNHCR's first task in 1951 was to help an estimated 1 million mainly European civilians, including these refugees in a camp in Germany, still uprooted in the aftermath of World War Two.  
© UNHCR/1953

# EXISTING TRANSITIONAL SETTLEMENTS

## What is a Transitional Settlement?

A transitional settlement (TS) is defined as “settlement and shelter resulting from conflict and natural disasters, ranging from emergency response to durable solutions”, as defined by Corsellis and Vistale, authors of *Transitional Settlement: Displaced Populations* (10).

The term was chosen to replace previously used terms such as *shelter sector* or *refugee camp* to better describe the following operational activities (Corsellis & Vitale, 10):

The term is broader than formerly used terms. *Transitional settlement* takes into consideration the effect that the settlement will have on the existing context in which it is placed.

Formerly used terms focus on individual families rather than the community as a whole. The more recently agreed upon term implies holistic focus on the community, and includes minority groups, such as female-headed households (FHHs).

The word ‘*transitional*’ clarifies and emphasizes that this is an emergency shelter, set up to house people fleeing danger.

The term is convenient in the sense that it could be used for all the different situations and circumstances that fall under the common category. It can be used in conditions ranging from emergencies to durable situations and development.



From Emergency Shelters to Homes, Haiti Settlements, Francesca Tassi Carboni

## Different Types of Transitional Settlements

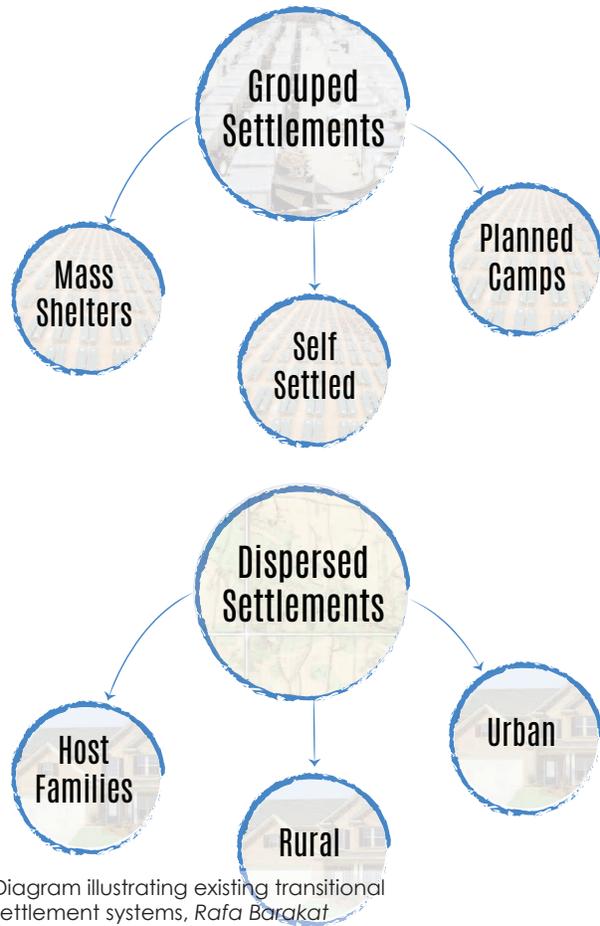


Diagram illustrating existing transitional settlement systems, Rafa Barakat

Description of each type (as per the *Transitional Settlement: Displaced Population* text):

**Dispersed in Host Families:** this option involves sheltering the displaced population within the households of local families, or on land or in properties owned by them.

**Dispersed in Rural Self-Settlement:** displaced families settle on land in a rural context owned collectively, rather than privately.

**Dispersed in Urban Self-Settlement:** displaced populations settle in an urban environment, occupying unclaimed properties or land, or settling informally.

**Grouped In Collective Centers (Mass Shelter):** these are usually transit facilities located in

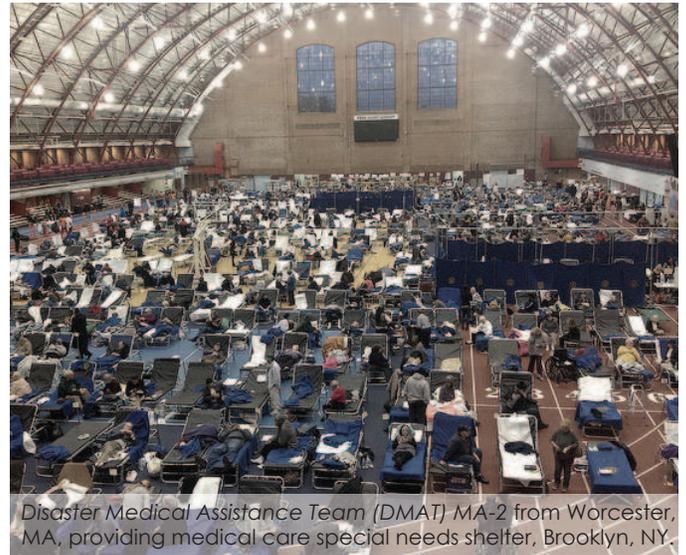
pre-existing structures, such as community centers, town halls, gymnasiums, hotels, warehouses, disused factories, and unfinished buildings, where a large group of displaced people find shelter.

**Grouped in Self-Settled Camps:** a displaced community settles in a camp, independent of assistance from local government or the aid community.

**Grouped in Planned Camps:** accommodation on purpose-built sites where a full services infrastructure is provided.

These options can, and sometimes necessarily must be combined. In the case of this thesis, the two types that were used are the **dispersed in urban self-settlement** and the **grouped in planned camps**. The architectural attempt made for this research addresses current Syrian refugees residing in Kilis, which is why it is considered a dispersed self-settlement. It is not located in an urban environment

but it intends on becoming an urban environment in itself, enveloping surrounding villages. It is also considered grouped because it is not exclusive to individual families, rather it relies on a community-based lifestyle. It is in a planned settlement because the land is to be purposely designed to accommodate a comprehensive, nearly self-sufficient, complete city.



Disaster Medical Assistance Team (DMAT) MA-2 from Worcester, MA, providing medical care special needs shelter, Brooklyn, NY.



Syrian refugee Mahmoud feeds his pigeons at the Marj el Kokh tented settlement where he lives with his family in Southern Lebanon. UNHCR

# REFUGEES, INTERNALLY DISPLACED PEOPLE AND RESETTLEMENT

## Who Are Refugees and Internally Displaced People (IDP)?

Refugees are men and women of all ages who are forced to flee their countries due to war, persecution, and political upheaval. Internally displaced people (IDPs) are people who are displaced within the borders of the country. Both refugees and IDPs tend to get little to no warning prior to the sometimes forced evacuation. They face very difficult conditions under which many die while attempting to escape the violence. Refugees and IDPs are different than migrants in that migrants make a decision, for personal reasons, to leave their country (International Rescue Committee).

In 1976, the United Nations Convention regarding the Status of Refugees defined a refugee as someone who “owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion, is outside the country of his nationality, and is unable to or, owing to such fear, is unwilling to avail himself of the protection of that country...” (UNHCR, 7).

Today, there are over 60 million refugees and IDPs (UNHCR). Palestinians, Syrians, Somalians, and Afghanis, respectively, make up about three quarters of that population. More than half of all refugees are children under the age of 18.

In the past, most IDPs have returned to their homes after the conflict finds its way to stability. Unlike IDPs, refugees who were forced to live in exile, end up settling in their new homes. Many of them choose so knowing that if they go back home, they will have to start over, once again. They cannot simply resume their lives before the war, and thus moving back would cost time, money, and a lot of effort, only to start their lives over for the second time. It would mean, they, and their children, who in many situations transition from childhood to adulthood in camps, would have to adjust to an entirely new life with a new home, surroundings and people (Agier, 20).

An insignificantly small percentage of refugees get the opportunity to travel to countries that are complete with opportunities, safety, and excellent living conditions such as the United States. Citizens of a First World country who were living away from their country of citizenship (i.e. in the country of conflict) are provided with the means to go back to their country of citizenship. For example, if a US citizen was living in Syria when the conflict first began, the US provides this citizen with the means to return to the US as soon as possible, and this person will have to option to flee the conflicted country to a safe First World country. This is called **voluntary repatriation**. For obvious reasons, most people who qualify for voluntary repatriation to a safe and prosperous country tend to remain in said country. Occasions such as this are referred to as resettlement (International Rescue Committee).

This thesis aims to give that opportunity to the many who do not meet the extremely high educational and financial conditions to qualify for resettlement in the West. This will not only normalize the lives of refugees, but it will also allow their host country to utilize the refugees' full potential, which in turn will benefit the host country, as it will make use of a diversity of mental and physical abilities that the refugees will provide.



Horrors of War in Syria, Tomorrow's World, 2016

## The First Refugees and the Origin of the Word

The first refugees acknowledged by researchers today are the Israelites, who were forced out of the Holy Land, Canaan, in 740 BC, when Assyrian rule conquered the land. However, the first time the originally French word, refugee, came to exist was in 1685, when a group of Protestant Huguenots escaped religious persecution by their tyrant king, Louis XIV (Chalabi).

Today, 12 million out of just over 60 million displaced persons are Syrian. That means Syrians make up 20% of all of today's displaced people. To put the numbers into perspective, it is worth noting that World War II, one of the biggest wars in history, was responsible for 40 million displacements. In comparison, the Syrian Civil War, has already caused 30% of that number, and counting. On average, over 5 thousand Syrians are fleeing their country daily.

## 75 Years of Major Global Refugee Crises

The timeline on the right is an infographic showing the conflicts that caused the major refugee crises in the past 75 years, and the causes of the wars. The edges of the timeline on either side indicate the number of refugees on the left, and the number of IDPs on the right. The information obtained by the timeline shows IDPs usually make up a larger number than refugees in most cases.

The infographic also demonstrates the significance of the Syrian Civil War, putting it on the top of the list. However, we can clearly see that other wars like the Palestinian Exodus and the Setback, and the Bangladesh War resulted in much higher numbers. Note that these three wars are decades old, yet they remain to be some of the top causes of today's refugee crisis. This shows that many refugees remain in their host countries for many decades.



French Protestant Huguenot refugees arriving on the English coast at Dover in Kent, 1685.

# History: Timeline 75 Years of Major Refugee Crises

2015

“ 36% increase in amount of people displaced since the year 2000

2015  
2010  
2005  
2000



War in Syria 2011-present



Civil Conflict in Colombia 2010-2016



Repression of Burma 2012-present



South Sudanese Civil War 2013-present



US Invasion of Iraq 2003-2011 **EXTREMELY CONTROVERSIAL**



2000

“ Refugees and migrants are not to be seen as a burden; they offer great potential, if only we unlock it.

2000  
1990  
1980  
1970  
1960



Rwandan Genocide 1994



War in Bosnia 1992-1995



Soviet Invasion of Afghanistan 1979



Civil War in Mozambique 1976-1992



Vietnam War 1965-1972



Bangladesh War of Independence 1971



Algerian War of Independence 1954-1960



Palestinian Setback (Six-Day War) 1967



“ Syria has become the great tragedy of this century. Antonio Guterres, United Nations High Commissioner for Refugees (UNCHR)

1960

1960  
1955  
1950  
1945  
1940

Formation of Communist Government North Vietnam 1954-1956



Palestinian Exodus (The Catastrophe) 1948



## The Current Condition in Syria

What started as a civil war in Syrian has now evolved into an international conflict. Granted, other countries are not directly affected by Syria, and are not at war with neither Syria nor each other. However, many of the major developed countries have become involved.

Six years ago, during the Arab Spring, in which many countries in the Middle East radically changed their regimes via peaceful protests, the Syrian population attempted to overthrow their own ruler, Bashar Al Assad. Today, 174 political factions are fighting in a brutal war that has claimed the life of 470,000 people. Just under half a million lives have been stolen, and 55,000 of them are children (Violations Documentation Center in Syria).

In a simplified manner, the 174 groups are divided into the Syrian government, anti-government groups, and ISIS. The Syrian government receives support from Russia, Iran, Hezbollah (a Lebanese faction), Venezuela, North Korea, Algeria, Iraq, Belarus, and large, international companies. It gets more complicated when it comes to the anti-government factions. as they are very divided, and each faction receives support from different countries. However, generally speaking, the countries that support factions under the banner of anti-government are the United States of America, the United Kingdom, France, Turkey, Qatar, Jordan, and Saudi Arabia (Galbraith).

The correlation between the two sides is hard to miss: Shiite—Iran, Hezbollah—versus Sunni—Qatar, Jordan, Saudi Arabia; US allies versus US "foes" —Russia and North Korea. The connection in post-Trump politics is also noticeable: Trump wants to amend relations with Russia, and is advocating for putting a stop to the support of anti-government groups.

[Note that this thesis does not take sides in the matter, it simply states the current situation to further explain why political analysts are not very optimistic of what the future holds for Syria.](#)

With the current condition explained, it immediately becomes clear that this war is not ending anytime soon. At this point, it is too chaotic and too many different groups and coalitions are involved. Unfortunately, this is true based on the predictions of many political analysts.

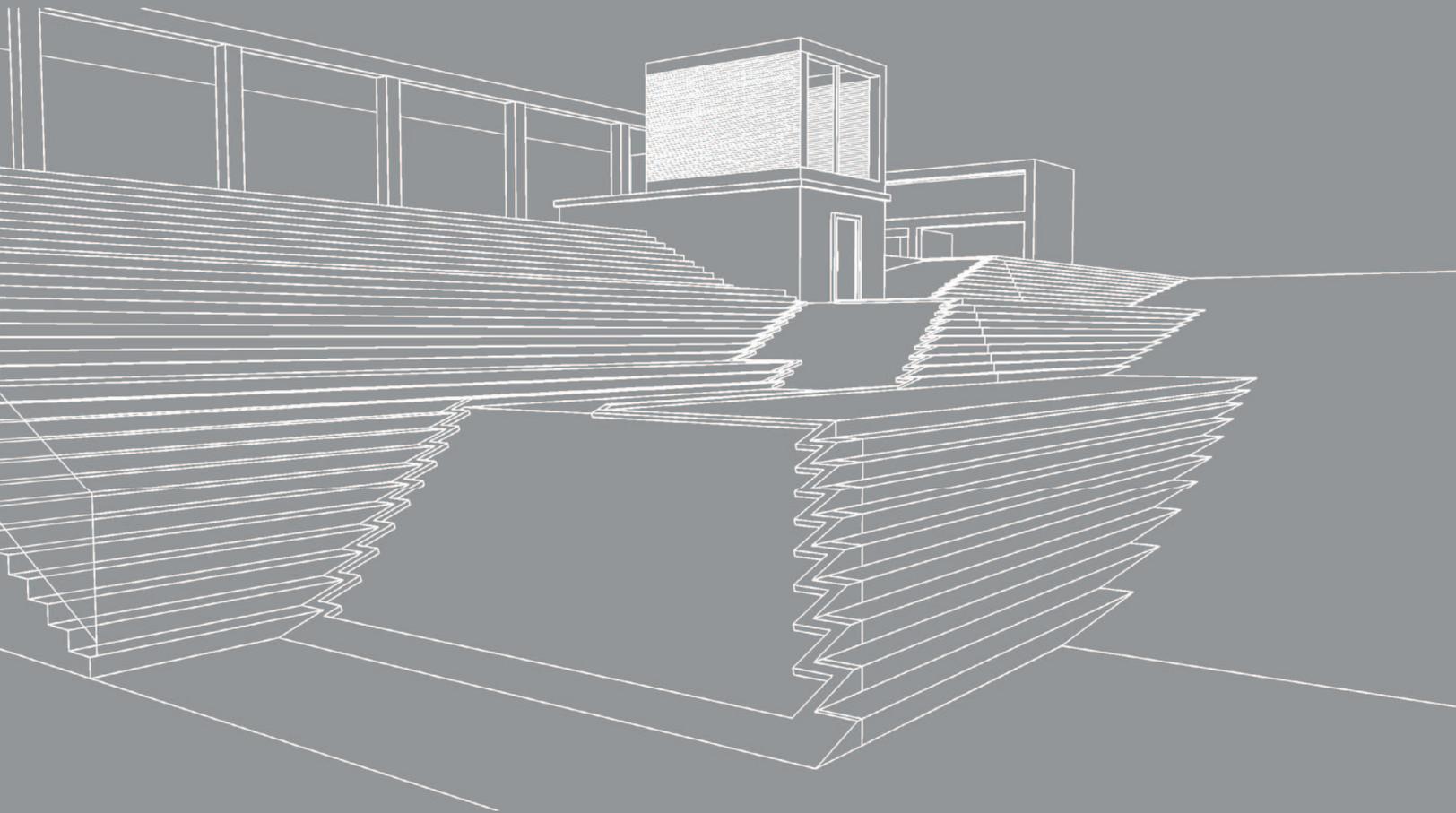
Stratfor, one of the leading platforms in geopolitical analysis, have been producing successful forecasts since 1996. In their 2015-2025 forecast article, Stratfor wrote, "We expect the instability in the Arab world to continue through the decade."

An article was published on Al-Jazeera's web page in 2014 states that international experts predict that "the war in Syria will carry on for at least ten more years, [due to] the support of Iran and Russia for the Syrian regime, and the control gained by armed militias on the battlefield."

In an interview with Hudson Union, Porter Goss, the director of the Central Intelligence Agency (CIA)—US, had predicted that the Syrian Civil War is unlikely to see an end in the next ten years long before anyone else. He adds that it will probably take more than a decade to resolve the conflict.

Matthew Levitt, an expert in the Washington Institute for Near East Policy had the same prediction for different reasons. While Goss thinks that as long as Assad is alive, the war will continue, and it will end when Assad get decapitated by one of the anti-government factions, Levitt seems to think extremist militias are the reason the war will not be resolved in the next decade.

The unfortunate predictions of Stratfor, the director of the CIA and an expert in the Washington Institute, reiterated and confirmed in an article by Al-Jazeera, which names more experts that agree with the fact that the future of Syria does not seem very bright, at least this next decade, was enough to influence this project, which aims to stabilize the lives of surviving victims of the brutally dehumanizing war.



# INTRODUCTION TO THE UNION



Conceptual Union City Business District, *Rafa Barakat*

# 2

## PROJECT OVERVIEW

This thesis revolves around one main idea: **enhancing the living conditions, and creating opportunities that will allow refugees to lead prosperous and goal-oriented lives in their new place of residence.** The project avoids the traditional idea of a transitional settlement and emergency shelter, and attempts to test the feasibility of this theory by planning a system and testing it on a theoretical resettlement of Syrian refugees in Turkey.

The Union will provide:

- Education for all age groups
- Jobs for people within the working age group—typically 18 to 59
- Hospitals for people in need of healthcare
- Well-designed, long-lasting homes
- Public gathering spaces

- Religious temples for religions practiced by the population
- Industrial buildings

The project is called the Union to emphasize that unity is mandatory for it to work. The community itself must have a sense of unity in which they all care about the holistic benefit of the community and not themselves as individuals. The countries must create an intangible union with one another as a motive to host the project and show support to the subjects in need. There must also be unity between the group of refugee and the original residents of the location in which the project is to be built.

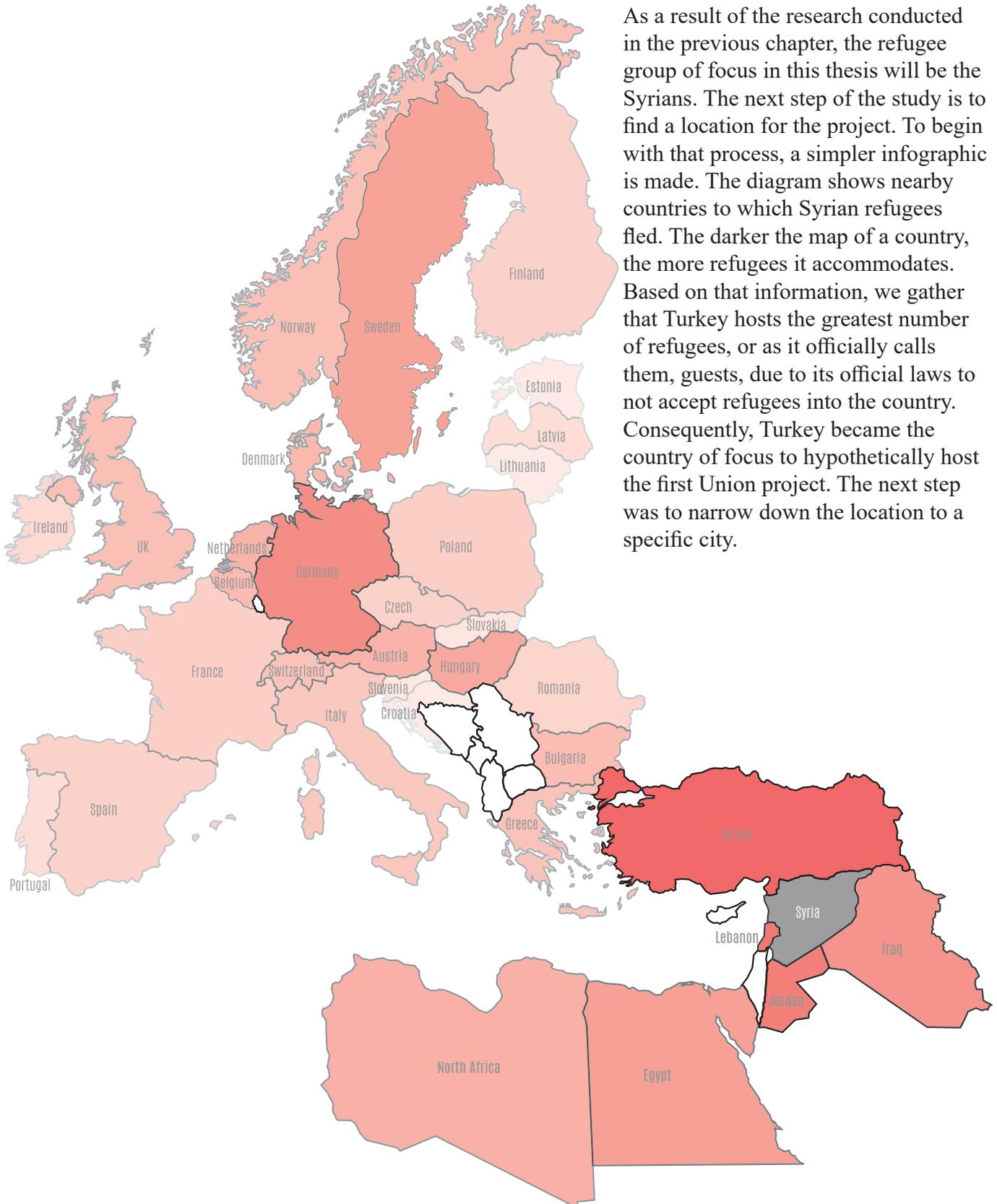
**This project in no way condones the dreadful wars and conflicts that are leading to the vast number of refugees. It merely seeks to find possible architectural solutions to the already existing crisis of people living in emergency camps, possibly for the rest of their lives.**



Conceptual Rendering of Apartment Building

# LOCATION

## Where are the Biggest Populations of Syrian Refugees?



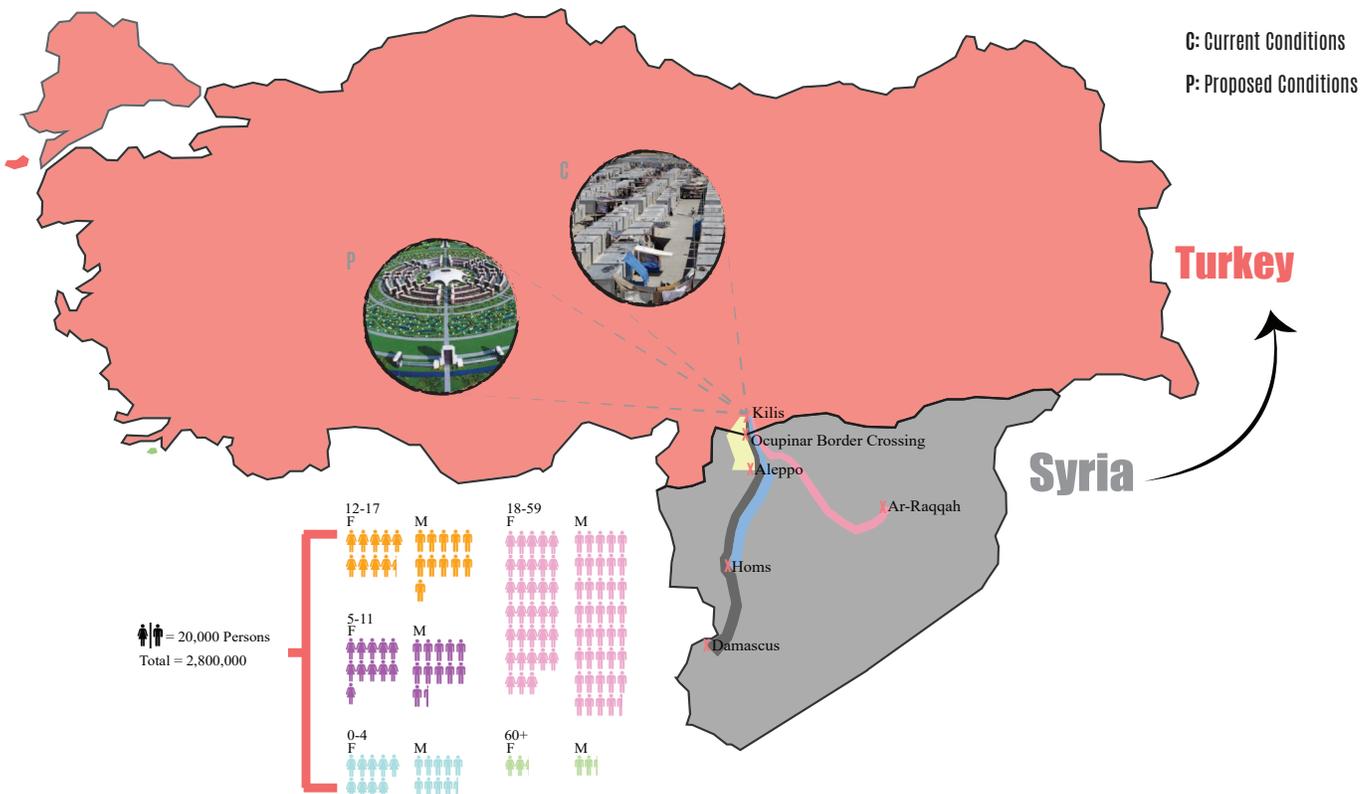
As a result of the research conducted in the previous chapter, the refugee group of focus in this thesis will be the Syrians. The next step of the study is to find a location for the project. To begin with that process, a simpler infographic is made. The diagram shows nearby countries to which Syrian refugees fled. The darker the map of a country, the more refugees it accommodates. Based on that information, we gather that Turkey hosts the greatest number of refugees, or as it officially calls them, guests, due to its official laws to not accept refugees into the country. Consequently, Turkey became the country of focus to hypothetically host the first Union project. The next step was to narrow down the location to a specific city.

## Kilis

Aleppo, the largest city in Syria, is dealing with an extremely concerning battle, in which it stands no chance of getting out of, as of its current status quo. While other cities are also experiencing traumatizing war, Aleppo is facing the most difficult struggle. The prominent Syrian city borders the Turkish city, Kilis, from the north. An open and official border that connects the two, Aleppo, Syria, to Kilis, Turkey, is called the Oncupinar. Syrians travel from many cities reach that border and enter their safe haven. The routes they take are demonstrated in the following infographic. The line that resembles their route has a fluctuating thickness that communicates the number of people who take the route in the hopes of fleeing. The line narrows as it reaches the border because many of the people who left their homes to reach Oncupinar lose their lives on the way. Passing through other cities, like Aleppo, takes away many lives. Many perish at the border, allowing only a small percentage of chance to actually arrive in Kilis. The image also illustrates the demographics of the refugees currently residing

in Turkey. The age group that comprises the biggest population is that of a working age. This means that many job opportunities are needed in the project.

Upon their arrival in Kilis, some of the travelers choose to extend their trip to farther cities in Europe. People choose their destinations based on where they think they could have a better chance of finding a place to live, as the accommodations in Kilis are limited. They base their chances on their capabilities and financial status. For example, a family with a handicapped member, who has limited mobility, will probably find it best to remain in Kilis. Meanwhile, a healthy family that can speak a different language—English, for instance, as it is the global language—has a better chance at finding a position in a European country. Many-a-time, the journey results in undesirable outcomes. Refugees use inflatable rafts to get to Greece, and more often than not, the raft capsizes, resulting in many deaths. It is a life-threatening risk that many refugees with ambitions and aspirations are forced to take.



Back in Kilis, many families have the chance to reside in “the nicest *refugee camp* in the world!”, as expressed by a Polish diplomat (McClelland). As per the collective agreement of many credible figures, the Oncupinar Refugee Camp, which is located to the west of a metal archway that marks the Oncupinar border, provides the best living conditions amongst all grouped settlements thus far.

Mac McClelland, an author at the New York Times has conducted a very thorough research regarding this specific refugee camp. She states that no one, including the UNHCR, academics, and the refugees themselves, denies that the standard of living in this camp is the highest they know of.

McClelland personally spoke with the Polish diplomat, who remains anonymous in the text, and after listing the amenities the camp provides, the diplomat replied saying, “I’ve never heard of such a thing.” Such amenities include, but are not limited to, power lines, a decent number of streetlights, playgrounds, fire hydrants, a preschool, and a kindergarten (McClelland).

All the listed amenities seem like basic human rights, which they are. However, compared to other camps, like the Sudanese Darfur camp, which on most days of the year does not provide gray water (Alexander, 11), the Oncupinar is a well-maintained camp.

Because the Oncupinar is the best camp to exist today, this project experiments the relocation of the people living in it to prove that better basic amenities does not mean better living conditions. As people begin to gradually resettle in the Union, vacancies will open up in the camp. The design/build process of the Union will occur simultaneously as new residents move in. This will allow the chance for current residents of the Union to contribute to the process of building the city. Not only will that provide them with job opportunities, it will also ensure that the residents have a say in the design of their new home. According to *A Theory of Good City Form*, a book by Kevin Lynch, it is essential for the residents of a city to have a say in their built environment. Lynch calls it the element of **control**. For that to happen, the initial constituents must comprise of people with certain

qualifications that will allow them to contribute and have an effective voice in the matter. This will include, but is not limited to, the architects, management teams, and construction worker of the first phase, and is further elaborated in the **Social Phasing** section of this book.

## Oruçlu

Now that the country and city in which the strategic framework of this thesis will take place has been figured out, a specific site must be chosen. The chosen site was less than a hundred miles east of Oncupinar, in a small, barely inhabited town called Oruçlu. The site was chosen due first and foremost to its proximity to the camp. This demands a shorter, and thus easier and safer, travel distance for the Syrian guests currently residing in Oncupinar. The site also carries the advantage of being close to the Syrian border, which means, naturally, the cultural difference is less obvious and easier to cope with. The site is a hill with its peak being 310 feet (95 meters) higher than its lowest point. This provides difficult architectural challenges to show that should the attempt prove successful in such circumstances, it will definitely be architecturally legible in much simpler conditions. To the east of the site is a large body of water, which if nothing more, could act as a recreational entity. Images on Instagram, which will not be shared for copyright and privacy reasons, showed Turks gathering by the large pond. Another advantage to the site is that, although it is connected to the neighboring major cities by what is considered an Interstate in the US, it has no roads on it, allowing complete freedom in the design of circulation, especially since the city must be, to a large extent, pedestrian-oriented.





# INFLUENTIAL CITIES



Conceptual Union City Modern Architecture Apartment Building, *Rafa Barakat*

# 3

## URBAN PRINCIPLES

Significant cities have affected urban planning and design throughout the years. Cities, ranging from contemporary, to ancient, to hypothetical ideas, will have a visible influence as this book goes more in depth on the planning of the prototype refugee city, the Union. This section will closely examine the cities that have influenced this thesis: Planner Ildefons Cerdà's *Eixample Barcelona* (Expansion of Barcelona), Abu Ja'far Al-Mansur's round city of *Madinat Al-Salam* (The City of Peace) which is the core of the historical city of *Baghdad*, and Ebenezer Howard's conceptual *Garden City of Tomorrow*.

### Eixample Barcelona

Before Eixample Barcelona, the city, surrounded by walls, was suffering very high densities to the extent where mortality rates went up. Finally, the Barcelona City Council decided that change was needed. In 1860, planner and engineer Ildefons Cerdà's plan for the expansion was chosen. Through his plan for the city, Cerdà wanted to achieve a healthy living for its residents. Thus, his focus was on creating a city that allowed maximum sun exposure, innovative ventilation, a sufficient area of green spaces, and appropriate circulation methods (Pallares-Barbera et al, 124).

His design consisted of 520 city blocks, separated by parallel and perpendicular roads. Each city block has sides that measure 113.33 meters (371.81 feet), and corners chamfered at 45° (Figure 3.1). The uniformity of the design was meant to eliminate segregation and offer equal living conditions for all social classes. Cerdà oriented all the blocks towards the northwest-southwest axis to allow for maximum solar gain as shown in Figure 3.2. In the winter, buildings would have maximum access to sunlight, while in the summer, one building would cast a shadow on the other, keeping buildings well-

insulated in both seasons. In order to achieve such results, building heights were also dictated by Cerdà. Each building was supposed to be 16 meters (52 feet) tall. Unfortunately, this was not enforced and buildings rose up to 24 meters (79 feet). As a result, buildings blocked sunlight for the lower floors. Cerdà had also dictated that the area that allowed for construction cannot exceed 50% of the area of the land and a plane tree to be planted ever 8 meters (26 feet). Buildings were to be built on two parallel edges of the lot, creating an 800-meter (2625 feet) green space between them to improve ventilation. However, that too was not enforced. Today, most blocks have construction around all eight edges (including chamfered edges), with a courtyard in the middle (Pallares-Barbera et al, 130).

A century and a half later, we now know the results of Cerdà's ideas. Residents seem to enjoy pedestrian-oriented city. Many have showed appreciation to the walkable proximity of all their needs. The grid city seems to have proven convenient to its residents. However, critics say the grid is monotonous and does not allow for any significant landmarks or city anchors. Cerdà's original idea was to eliminate segregation between social classes, however, his plan failed to do so. The Passeig de Gràcia (location of Antonio Gaudí's Casa Milà and Casa Batlló) area was and still is an aristocratic site.



Aerial view of Eixample Barcelona, Google Earth

## Madinat Al-Salam, Baghdad

Unlike Eixample Barcelona, which was built to break out of Barcelona's previously existing walls, Madinat Al-Salam was enveloped by a round defense wall. The city was built by the founder of Baghdad, the Abbasid caliph Al-Mansur (Peterson). In Al-Mansur's defense, the city was built over a millennium prior to Eixample Barcelona. When Madinat Al-Salam was constructed in 762, cities were built within defense walls.

The wall was built round to provide maximum security, as corners were known to be the weak points of a defense wall. Access to the inside of the city was through the four gates, perfectly aligned on two perpendicular axes (Abbas & Al Dujaili 1075). For defensive reasons, the gates were slanted inwards, towards the second layer of the double wall (Peterson). Along the two axes that provided the entrance to the city were shops and markets. At the center of the city, where the axes meet, was Al-Mansur's palace and the mosque, the two anchoring buildings of the city. The axes would naturally create four quarters in the circle. Although the quarters were equal in size, they served different purposes (Abbas & Al Dujaili 1076).

For six consecutive centuries—8th century to 13th century—Baghdad was a hub for education and innovations. It was home to scholars from all over the world. It contained the House of Wisdom, which was dedicated to translating ancient works of intellect, such as Greek philosophy and Persian and Indian mathematics. Leonardo Fibonacci, a European mathematician traveled to Baghdad to practice mathematics. His residence in Baghdad allowed him to learn the Arabic numerals and the number zero. He introduced the zero and the Hindu-Arabic numerals to Europe after he returned. Since then, most Western countries have adopted the Hindu-Arabic numeral system, including America, and most European countries. Baghdad was also home to the greatest literators and literarians. In addition, the historic city housed many of the most devout religious scholars, and was also a hub for commerce. Thus, the quarters were divided into different fields of studies and/or specialties. This, however, did not create any problems of segregation

On the contrary, Baghdad was a city of tolerance and peace, as its name suggests. People from all religions and ethnic backgrounds were welcome and, although Islam was the predominant religion, it did not look down on people from other religions and gave them the right to practice their beliefs freely (Abbas & Al Dujaili 1078).

The problems that emerged due to the round design of Baghdad was its lack of ability to expand. At its peak, the city housed an estimate of 1.2 million inhabitants. At some point, markets were forced to relocate outside of the walls to allow for more residents, yet the city still could not accommodate for its exponentially increasing population. Other than that, the city operated and functioned relatively well (Creswell 152).



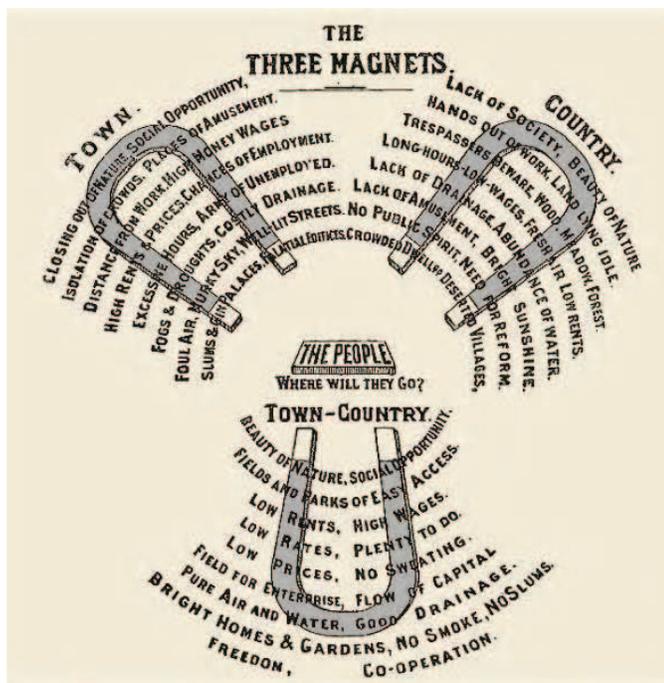
Reproduction of Madinat Al-Salam, Baghdad, *Uncredited*

## The Garden City of To-morrow

Similar to Baghdad's circular plan, Ebenezer Howard proposed a city plan that consists of circles within a larger circle, and called it the Garden City of Tomorrow. However, although Baghdad's design failed as a city due primarily to its failure to expand, Howard's city dictated that limited expansion makes for a better city. Unlike Barcelona and Baghdad, his plan was not site-specific, and although he did diagram a layout of clustering garden cities within a larger development, his ideas did not necessarily have to be designed that way. And thus the Garden City became a movement and not a form of design. Several attempts to implement the layout and concepts were made, in hopes of achieving the positive results that Howard had promised.

Credited for founding the garden city movement,

Howard strongly believed in the integration of man and nature, hence his utopian conceptual city in which people live in harmony with nature. He focuses first and foremost on eliminating the notion of town and country, and creating a new combination of town-country. This is illustrated in his famous Three Magnets diagram shown below.



The Three Magnets from Garden Cities of Tomorrow, 1902 Ebenezer Howard

Howard believed that in order to achieve such a utopia, three principles must exist:

- A strong community
- Ordered development
- Environmental awareness

This set of principles is not only required for the city to be successful, but are also a result of a successfully designed garden city, making it a cyclical loop rather than a straight line process.

The elements of the city that allow for the three principles to occur are:

- Unified ownership of land to prevent individual control of land
- Maximization of community benefits
- Careful planning to achieve generous working and living space while maintaining natural qualities of city

- Limited growth of city
- Good social mix and community facilities
- Local participation in development decisions
- Welcomes all social classes
- Balance in agricultural and industrial
- Housing to be carefully distributed
- Transportation and circulation to be thoroughly studied
- Diversity in age, occupation, and abilities

The first garden city attempt was in Letchworth, England. In fact, most attempt have been made in England, as Howard's inspiration came from the housing problems his home country. Surely, his ideas were highly influenced by his country, and thus seem to make the most sense there. However, today, China is making an attempt to build its first garden city in the city of Tianfu, Chengdu. Like Letchworth, Tianfu will not be following Howard's plan to the letter. Modifications are made to accommodate each site and its requirements. While Letchworth was designed to house 33,000 people, but Tianfu is being designed for 2 million inhabitants. It does, however, abide to many concepts documented by the Howard. It will have a central urban district surrounded by a relatively large area of greenery. It follows his idea of incorporating nature in the urban day-to-day life, which is the core of his idea of a garden city. Tianfu also ignores Howard suggestions on land ownership. Rather than implementing a unified land ownership system like Letchworth, Tianfu's land is owned by the Chinese government, as it is responsible for the new city's upkeep (Ames).



Artist's impression of Tianfu Garden City, PR

# UNION LOGISTICS



Conceptual Union City Business District, *Rafa Barakat*

# 4

## CONCEPTS AND PRINCIPLES

Influenced by Ebenezer Howard's Garden City of To-Morrow, this thesis takes a similar approach and comes up with concepts and principles that could potentially be applied anywhere. It determines a system that could be a possible solution to the unprosperous, dehumanizing life that is currently offered to refugees in grouped settlements. The topics discussed in this chapter will be applied on a hypothetical city in an attempt to examine their theoretical success in later chapters.

The system suggested in this thesis is based on a set of 3 elements:

- Core principles
- Social Phasing
- Construction Phasing
- Home ownership

### Restoring Humanity

In a previous chapter, the death toll of 470,000 was stated, followed by the number of children among the fatalities: 55,000. During wars, people generally become numbers—mortality rates passing through the news ticker on the bottom of television screens. As the casualties increase, the numbers seem more insignificant. They are rounded up and down. The above numbers are updated daily, yet they are still an estimate. One reason is of course the lack of knowledge of the exact number, as it does seem difficult to keep up when an average of a dozen people die every day in Syria. However, this method of rounding the number of fatalities gives insignificance to the individual. While the numbers are enough for the viewer to comprehend the vastness of destruction in the war, it does not help people relate to it on an emotional level. If people begin to think of a single individual among deaths as the three-year old son of a family of five, the

extent of damage is already becoming clearer. Five people's lives have been changed forever. A grieving mother and father may never be able to live the same way again. Now imagine this same mother losing her husband—her high-school sweetheart. Many people do not have the strength to live through one of these tragedies; but this woman has two children who are still alive, so she must remain strong for them—especially through the rough circumstances the family is under. The mother decides to flee Syria to protect her remaining family, and to start a new life away from the sounds of detonating bombs that act as a daily reminder to the tragic deaths of the love of her life and her toddler. She musters every last ounce of strength in her, and attempt to cross the border with her two children. Half way along her route, one of her kids gets shot. She is left with one child, once again, incapable of releasing emotions, to protect the only member of the family remaining. She finally reaches the border, but as she crosses into Turkey, she loses her last in an airstrike. She left her house, that had an adequate backyard, a spacious courtyard, and three bedrooms, only to arrive in a container alone, with nothing to do but grieve—all day, every single day.

Unfortunately, this is not a hypothetical story. It is the story of a strong woman named Tahani Hayek. Hayek came from a wealthy family. She is highly educated with a Master's Degree in Business Management. She married the love of her life, who happened to be less privileged, and was thus deemed unqualified to provide a comfortable life for the family in nearby countries when the war began to erupt. This is the story of four fatalities—four people who were rounded up or down—four people whose death changed the life of many who loved them. Statistics count mortalities, not the affected living. They do not include people who may have lost limbs, or are suffering paralysis, and they most certainly do not take into account the psychological affects of such traumatizing experiences. This may be the reason people become emotionally detached

to the numbers. Accordingly, the first step to designing a Union was to create personalities. Two families of different ages, social classes, occupations, and backgrounds became characters—prospective residents of the project. Questions like *how would they like to live?*, *what would they want to do?*, *how can this project make them care about their community, socially, structurally, and environmentally?*, and the answers to these questions, along with influences from the three cities explained in chapter 3, dictated the direction this project was heading toward.

## Core Elements

### Layout: Zoning

Léon Krier is an architectural theorist and an urban planner, who published a book called *Houses, Palaces, Cities*, criticizing the current conditions of a city. Krier is critical of the notation of zoning, and believes cities should get rid of zoning all together, and should, instead, create "urban quarters which integrate all the functions of urban life," meaning industrial areas, public areas, housing areas, etc., should all exist in every urban quarter.

The Union operates in a similar, yet modified, sense. The city should incorporate the idea of having near-autonomous towns that are then further divided into town quarters which should also include the daily necessities of its residents.

The advantage of having vast populations moving into a Union all at once makes this possible (further elaborated in the Social Phasing chapter). This enables the system to provide the residents with jobs located near them, as we already know who will be living where and what occupation they want to pursue. The contrary to that exists in a typical city that is not built to relocate an existing people. A typical city grows naturally: people decide to move in from a different place, and search for a vacant and appropriate home, that may or may not be of close proximity to their workplace. Every resident should be able to walk an estimated 20 minutes to get from any given point within the quarter to another. Within the 20-minute walkable distance, a resident should encounter commercial districts that

include, but are not limited to, grocery shops, clinics, pharmacies, restaurants, day cares, schools, gyms, office spaces. The quarter should also include an industrial zone, and a residential zone that has a variety of housing options.

The Union does not completely eliminate functional zoning, but is not stringent on the exact area for each function to occur. Although this is more thoroughly explained in later chapters, it suggests that the residents have partial control over the zoning, seeing as they will be utilizing the space. An apartment building can potentially designate a space or floor for commercial use under conditions that are also explained in further chapters.

The flexibility of zoning also means that a block that is programmed to be a commercial zone, for instance, could also contain open gathering spaces, such as parks. An industrial zone could have commercial spaces along its edge. These businesses do not necessarily have to be built structures, but could be simple kiosks that sell good produced at their corresponding factories. Kiosks could also exist in areas that were initially programmed to be public spaces or parks. We can, thereby, conclude that **functional zoning** is lenient and is not dictated by the system but can be changed to accommodate the community's desires.

This, however, does not apply to all zoning ordinances. Height restriction should be taken more seriously, as the height of a building has the potential negatively effect on its surroundings. The Union's first and foremost concern is to assure equality for all its residents. If a single building is negatively affected by its surroundings, it will value, making it less desirable by a certain class, ultimately becoming occupied by a lower class. This will obviously affect the residents surrounding it, creating a division in the community and segregation within the town. This defies one of the key elements of a Union. Height restrictions will be explained in more detail in the Architecture and Urban Planning section of this book.

### Layout: Centers

Krier argues against having centers. Like functional

zoning, he proposes the complete abolishment of center (city centers, downtowns, etc.). The Union however, complies with Howard's Garden City of To-morrow by creating a center for each town and a larger center for the city. Nonetheless, the Union learns from past experiments of implementing a garden city. While Howard was also attempting to eliminate segregation of class, age, and occupation, his centers caused the contrary. In an attempt to fix this, a Union's center are to be strictly for facilities requiring large structures that are difficult to place in every quarter or town. This includes primary places of worship, such as a church or a mosque, colleges, specialty hospitals, and more. However, a chapel and musalla should exist in every quarter, as should emergency clinics and other smaller medical facilities. Centers should also include management of quarters, towns, and the city. Residence is strictly prohibited in centers.

## Walkability

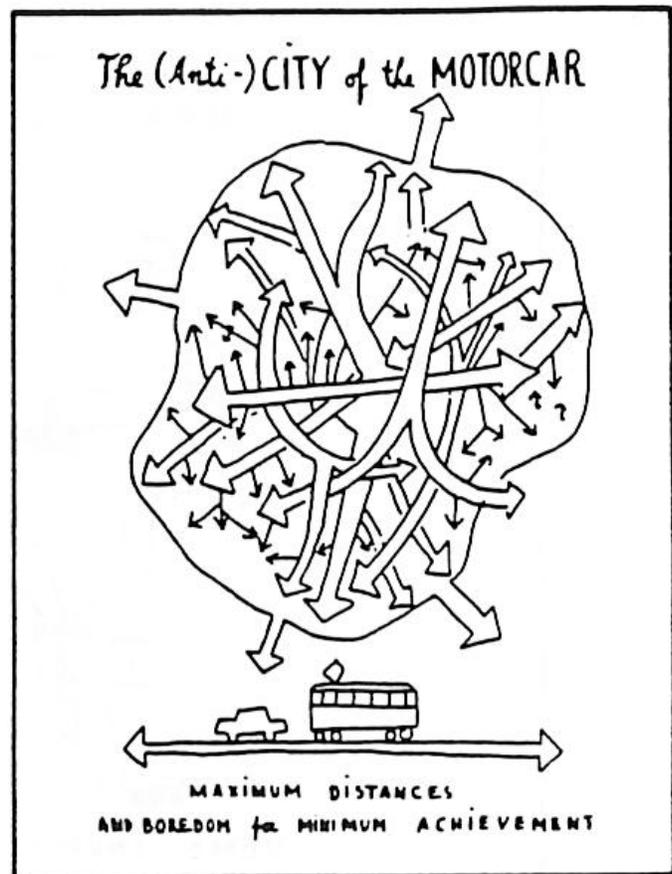
In 2010, Norman Garrick, an urban design and planning expert who has worked in renowned firms like Skidmore and Owings & Merrill and is now the Assistant Commissioner of Planning and Development of Sullivan County, wrote an article about the end of the automobile era. He says certain events had led him to believe that "the hundred-year ascendancy of automobiles in American life" is coming to an end.

One indication to trigger this thought was a 5-0 city council vote in Portland, Oregon, to "accept a new bike plan with the ambitious goal of increasing the percentage of people riding bikes from 6% (the highest of any big city in the country) to 25%." Portland first introduced a bicycle plan in 1973 (Mionske). While most cities in America were building better highways, the Rose City saw a future headed towards healthier choices. The biking initiative took some refinery, and several years later, enhanced biking plans were introduced.

Another incident that served as indication for Garrick's belief was happening on the opposite side of the country. Jannette Sadik-Khan, New York City's Transportation Commissioner, had dreamed of closing off Broadway to cars. Soon enough, she brought her dream to life, and two blocks of Broad-

way were closed off, allowing bikers to travel in both directions. The bold move saw positive results immediately. Pedestrians were filling the space, which also served as a successful gathering area in the beautiful city's major road. Bikers were going up and down the street, as there were no longer lanes to abide by (Sadik-Khan). It was a simple initiative that proved people are thirsty for more personal interactions with the road and the day-to-day outdoor life.

In his previously mentioned publication, Léon Krier writes, "Zoning dictated by big industry, and their financial and administrative empires, can be fought only by democratic pressure that demands the reconstruction of urban communities where residence, work, and leisure are all within walking distance." In the illustration shown below, Krier indicated that what he calls the (Anti-) City of the Motorcar offers maximum commute distance and boredom for minimum achievement, implying that a pedestrian oriented city would offer shorter commute would be significantly shorter and much more pleasurable resulting in maximum productivity.



The (Anti-)City of the Motorcar, Léon Krier

What Krier fails to add is the environmental and economical benefits of a pedestrian-oriented city. An initiative on making Iowa the healthiest state in America published an article on these benefits. The article starts by stating:

Walking plays an important role in improving our quality of life because it helps protect and improve the living environment and natural resources. Improving the environment in turn brings added health benefits that come, for example, from cleaner air, less traffic noise and fewer road accidents. Walking is highly efficient in its use of urban space and energy, it rarely causes injury and it gives streets vitality and personal security.

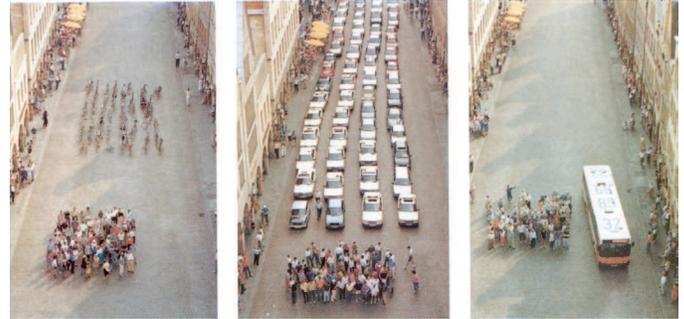
Walking lowers carbon monoxide emission, as cars are responsible for 80% of the polluting gas. 55% of nitrogen oxide pollution is also a product of cars (McLaren)

The introduction of electric cars should lower these numbers, but they still run on electricity, which at this point is mostly created from natural, non-reusable resources.

Even if innovation reaches a point where cars run on solar and wind energy, it still creates social and economic problems. Some of the social problems were mentioned earlier, however, the important aspect of health was not brought up. Biking or walking as a method of transportation increases the overall health of the residence. It makes exercise a natural part of every capable resident's day. *Designing Healthy Community*, a book by Richard Jackson, dedicates a chapter to the health benefits of walking and biking, as oppose to the contrary. The book states that the three elements causing our generally deteriorating health condition are "an unhealthy environment, lack of exercise, and bad nutrition." Almost eliminating cars will create a healthier environment, and will force people to incorporate exercise into their daily lives. The book states that a Japanese study shows that taking 10,000 steps are enough to improve our health exponentially. A US study shows that walking for thirty minutes a day, five days a week, can reduce a person's weight by 5% to 7% and the risk of diabetes by 58%. One bold step can potentially

be a solution to two thirds of the reasons hindering a healthy lifestyle.

Another advantage to making the city primarily walkable is that it reduces circulation space. The illustration below shows how much space is needed to accommodate sixty people using different methods of transportation.



Department of Transportation, Munich

As a result of this, buses are to be used as the primary motor-vehicle to transport large numbers of people. Motorcycles are permitted, but on certain conditions. The conditions exist to make it difficult for people to choose the least healthy, environmental, and economical option. If accessibility to motorcycles was easy, it may become the majority's first choice of transportation.

Roads will be designed to accommodate pedestrians primarily, but also operates as an access for emergency vehicles, such as firetrucks and ambulances. Industrial and commercial zones will also require vehicular access in order for shipping trucks to reach them. Hence, vehicles should have access to every building. Roads may be one way, as vehicular traffic should be minimal.

To provide the residents with convenient solutions, a bike share system is to be implemented in the city. Several bike share stations should be available in each quarter all around the city. This enables residents to use a bike, rather than the bus, to navigate not only to their usual location (workplace, home), but also to the center of the town, the center of the city, and other neighborhoods.

Many European countries are becoming more aware of the importance relying on walking and biking as oppose to automobiles, and are beginning to modify the way their roads operate in response. Karl Johans Gate, a street in Oslo, Norway, is one of the best



Karl Johans Gate demonstrating a pedestrian road, Google Earth

examples of that. Although it is harder to change existing roads, the city chose to take initiative and implement a similar system to the one proposed above. It turned an entire area into almost entirely pedestrian roads. The brick roads are capable of accommodating authorized vehicles, but it is primarily pedestrian. As of yet, the road is bordered mostly by businesses, as shown in the following image. However, some of the buildings contain residential apartments on the upper floors.

## PHASING

Phasing is a system set to organize the approach, layers, and steps of the construction of a Union and its social structure. The first and foremost aim for building a Union is to create immediate jobs for its prospective residents. Followed by that, the Union aims to provide its residents with better living conditions. Therefore, instead of constructing the Union and then bringing in its residents, a system of phasing is set to begin providing its future residents with jobs, and moving people in as soon as possible. This allows the construction of a Union to be a progressive and ongoing progress. This way, people involved in the construction process will continue to work even after they have settled into the city.

The social phasing focuses on the how every quarter will operate when its construction is near complete and it starts to welcome its new inhabitants. **It must be noted that the two phasing processes must work simultaneously for the phasing structure to work.**

### Social Phasing

During the beginning of the construction phase of any given quarter, vetted refugees of certain occupations or abilities are given the opportunity to contribute. If this is the first quarter to be constructed, the vetting process is done by experts from the hosting country and/or the UN. In the case of this project, Turkish experts and experts sent by the UN will be responsible for this.

The jobs that will be needed in the very beginning should be determined by responsible parties concerned with social, economic, and construction matters. They will most likely include:

- Labor workers
- Engineers
- Architects
- Managers

## Preconstruction Phase

The very first step of Social Phasing is to vet and hire engineers and land surveyors to begin the design and construction processes of building the city. The vetting and hiring process is to be conducted by experts assigned by the host country and/or by the UN. Once the first group of engineers and surveyors complete work on the first quarter, they become responsible for vetting and hiring more worker (if needed and if available) to work on two more quarters. Adding an extra group of engineers and surveyors allows the work to go at a faster pace, as multiple quarters will be undergoing construction at once.

After that, the process of vetting, hiring, and training, if need be, of labor workers begins. Once again, the vetting, hiring, and training is done by experts assigned by the host country and/or the UN. However, in this step, if experts are already available within the population of refugees, they are hired to assist with the training process.

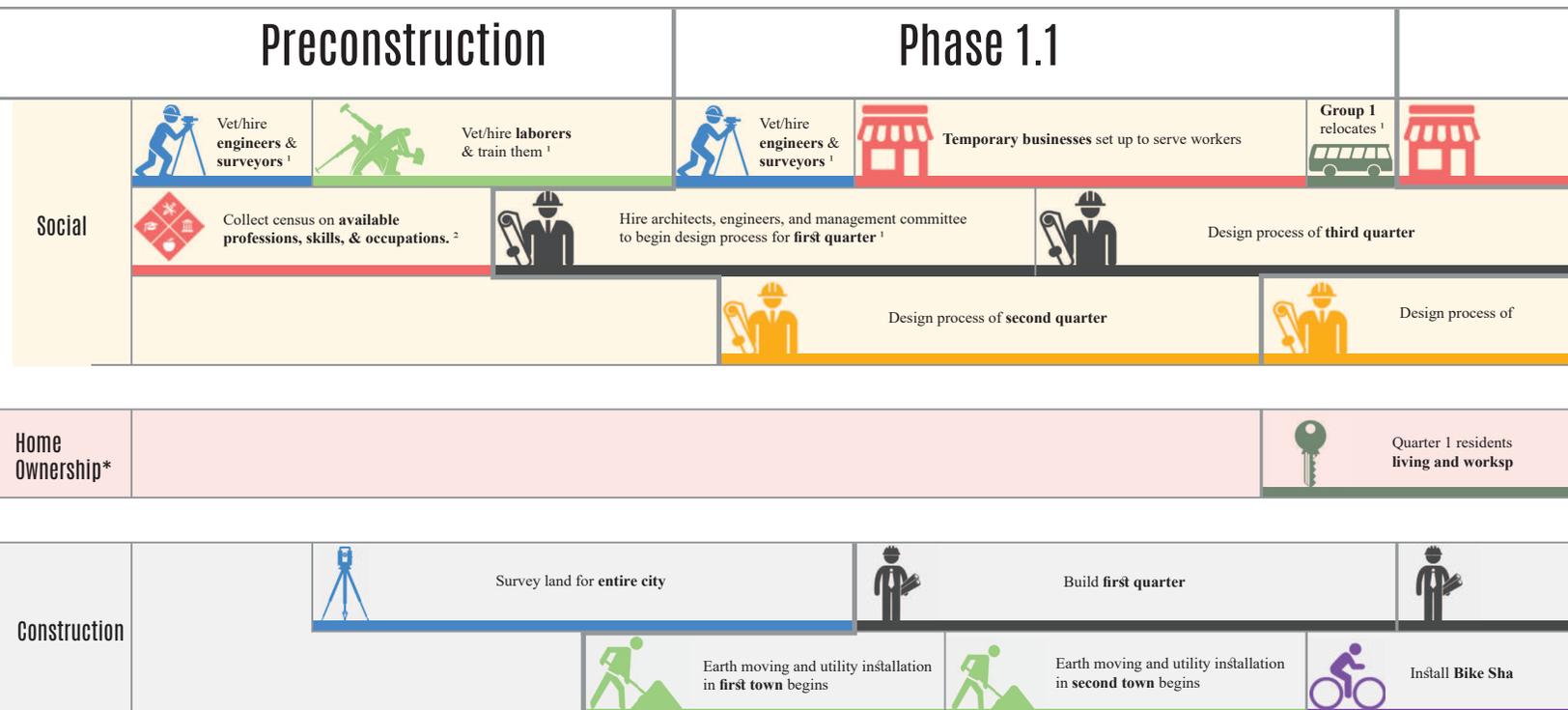
While the above two steps take place, the Social Experts of the Management Team (SEMT) and the Business Experts of the Management Team (BEMT) will be working on collecting census on available professions, skills, occupations, genders, ages, etc.

business plans pitched by prospective residents of the Union. This allows SEMT and BEMT to assign the prospective residents with the appropriate homes and commercial spaces (if applicable).

### Phase 1.1

As mentioned above, all workers hired in the Preconstruction Phase are to be responsible for the vetting, hiring, and training of more employees. In the case of engineers, this can only happen if more people with the appropriate education in engineering exists. The new group (if applicable) of engineers, surveyors, and labor workers will begin responsible for the second quarter, while the original group of employees is responsible for the third quarter.

Meanwhile, the architects and planners among the refugees are hired to begin designing the first quarter. If not enough architects and planners exist within the refugee population, third party architects and planners may be hired to complete the tasks. In the case of the experimental design shown in the next chapter, Strategic Framework, there is enough research to support the claim that there are many Syrian refugees who hold professional degrees, including: medical degrees, engineering degrees, architectural degrees, and law degrees.



<sup>1</sup> Keep prospective residents informed of upcoming vacancies and job opportunities. This gives them a headstart on any education they need to get or skill they need to acquire

<sup>2</sup> The hired employees and the chosen groups of people moving in is thoroughly vetted and relocated to ensure a wide variety in diversity of age, occupation, and gender.

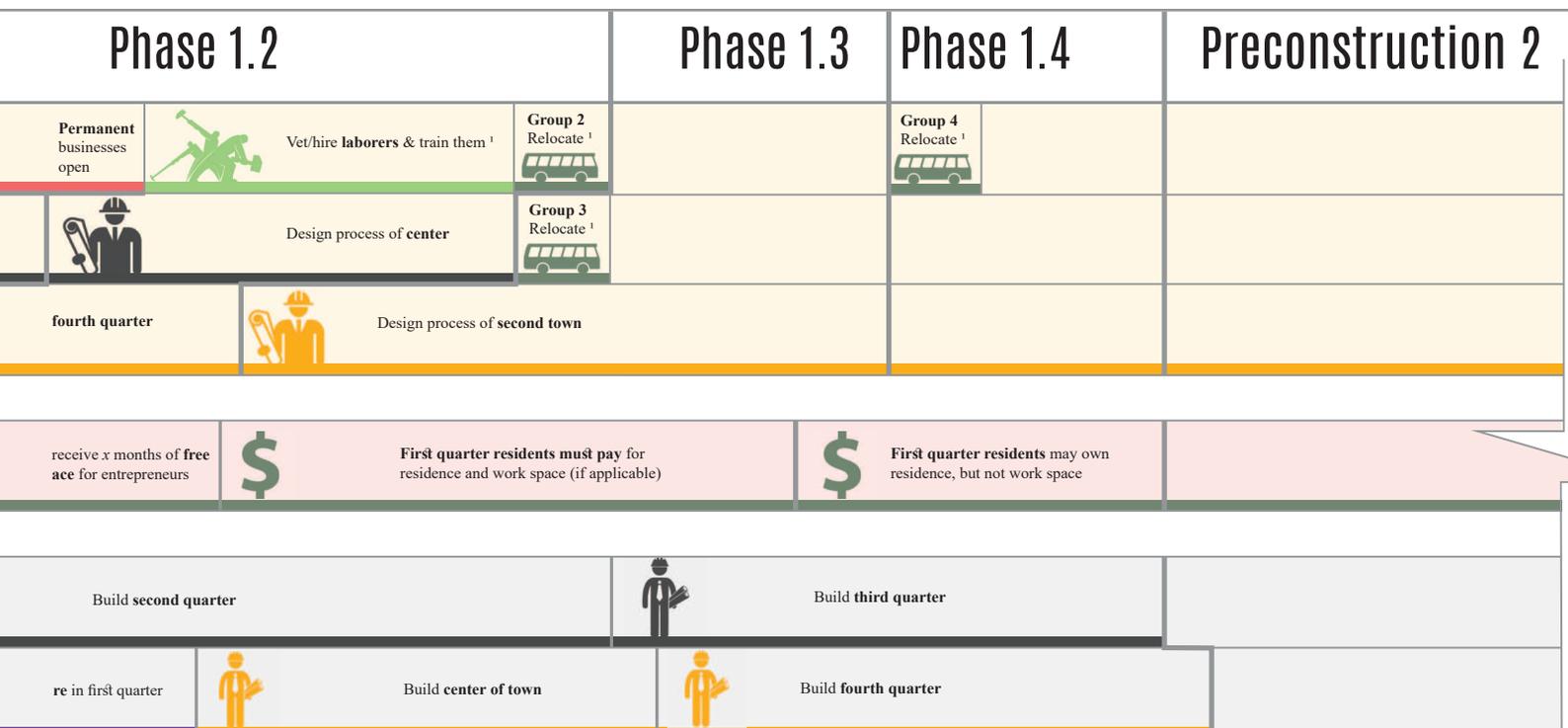
As architects get hired, the design process of the first quarter begins. The construction of the city will not be a traditional design-bid-build, but a fast-track project. This means that construction will begin before the design is complete. So, as construction begins, a small percentage of business-owners who are operating kiosks in the original refugee camp (in this case Oncupinar Refugee Camp), may choose to commute with the other employees and operate a temporary business in the Union to provide the employees with goods, like food and beverages. (Further elaborated in [Logistics, regulations, and policies of business ownership and operation](#))

After the quarter is at substantial completion\*, with operable public gathering areas, commercial spaces, and residential dwellings, the first group of people, chosen by SEMT and BEMT based on the data collected and analyzed in the preconstruction phase, relocates to the Union. This group will comprise of the employees who contributed in any way to the construction of the first phase, along with their families (if applicable). This will include anyone who ran a temporary business during construction, and farmers whose jobs began prior to the resettling (More on these two groups in [Logistics, regulations, and policies of business ownership and operation](#)). This creates a diversity in class, ability, and the

businesses that will open in the first quarter. If there is enough space for more residents to relocate, a group of different classes, ages, abilities, and a variety of married people with families and single people who live alone is to be thoroughly chosen. When choosing this group, management should try to fit as many of the second quarter's employees as possible. Management should also try to include people who will open businesses and run them. Having dedicated management teams like SEMT and BEMT that interviews prospective residents and make calculated decisions as to who moves in and when provides jobs for people on the teams and keeps things organized.

### Phase 1.2

Phase 1.2, as its name suggests, is the phase in which the second quarter of the first two is constructed. Phases are separated by construction phase, as that is what dictates when the groups are to move in. In Phase 1.1, the architectural design of the second quarter began. To reiterate, this project is a fast-track one, so construction will begin before the design is complete. Thus, the design of the second quarter will begin in Phase 1.1, but will continue to Phase 1.2. Architects will also be designing the center in this phase. If there are



\*Substantial Completion: the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the [planners & management] so that the [inhabitants] can occupy or utilize the Work for its intended use. (American Institute of Architects Definition)

enough architects to form two groups, one which continues the design of the second quarter and begin designing the third, while another designs the center, the process would be quicker. If not, the process will occur as follows: continue and complete design of second quarter, then design center, and lastly, begin designing the third quarter.

The reason the center should not be put off longer is because once a town reaches two complete quarters, the population is already big enough to need large public gathering spaces, and large facilities that can accommodate bigger populations.

However, the first thing to occur in this phase is all temporary businesses from Phase 1.1 become permanent in their assigned commercial spaces.

Once the construction of the second quarter is at substantial complete, the second group, vetted by management, relocates to the town.

This process continues until it reaches the last phase of the town, Phase 1.4, and is repeated as needed, starting with Preconstruction Phase 2, then Phase 2.2, etc.

## **Construction Phasing**

### **Preconstruction**

As mentioned in the Social Phasing section, Phase 1.2, the names of the phases given refer to the town and quarter that are being constructed during that phase. Consequently, the only task in the Preconstruction Phase of Construction Phasing is land surveying of the entire town done by the engineers and surveyors hired in the Preconstruction Phase of Social Phasing begin. However, as soon as they are done with the first quarter, it is to be given to the architects and planners to start the design process.

### **Phase 1.1**

Earth moving and utility installation for the whole town is to be carried out by the labor workers hired and trained in the Preconstruction Phase of Social Phasing in the first town is the first order of business

in this phase. However, it must be noted that architects should have begun topography modification before this step begins. This is shown in the Phasing Chart, shown in the previous page, that illustrates the phasing processes. Thus, following the installation of all utility necessities, the topography is to be fixed based on said architectural drawings.

As soon as earth moving and utility installation of first quarter is complete, workers are to begin construction in that quarter.

Once at a substantial complete, the quarter is ready to accommodate incoming residents. As explained in Social Phasing, this is when group 1 gets relocated.

### **Phase 1.2**

As some workers begin the construction of the second phase, others work on installation a bike share system. This will allow for group 1 and group 2 to use the bikes to get to one another's quarters.

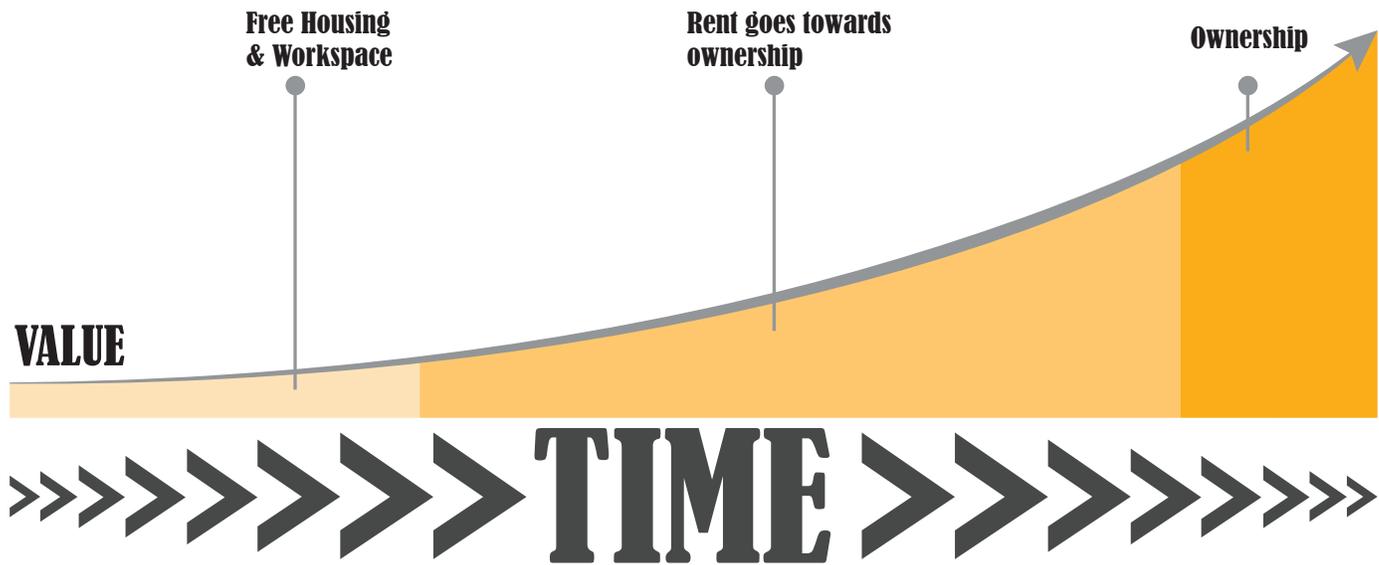
After that the construction of the center begins, brining the two quarters together via a public social gathering area to the Union.

As with Social Phasing, Construction Phasing will essentially become repetitive after this phase with a few minor tweaks that are shaped by the design of

## **Home Ownership**

The Home Ownership system in the Union is built to allow residents to eventually own their homes. The first  $x$  months (where  $x$  is a variable dictated by Economic Experts in the Management Team) are free of rent. The rent paid afterwards will go towards the payer's ownership of the space.

For example, if John Doe's apartment costs \$30,000, and he had been paying \$300 in rent every month for six years, he will have paid off \$24,000 of the \$30,000. If he has \$6,000, he can pay the amount and own the apartment. His other option would be to continue to pay \$300 per month for twenty more months.



Time vs Home Ownership Diagram, *Rafa Barakat*

To create incentive for future investors at the Union, a small percentage—maximum may be dictated by Economic Experts in the Management Team—may be taken out of the monthly rate.

For example, rather than having all \$300 go toward John Doe's ownership of the apartment, only \$270 would go to toward the ownership, and the remaining \$30 would be monthly profit for the investor.

An investor could choose to add the amount to the original price of the apartment, resulting in the same amount made in profit.

Another system regarding Home Ownership is built to limit the ownership in each town and color group to maintain social equality and diversity in towns and quarters, as well as to keep rent prices in order.

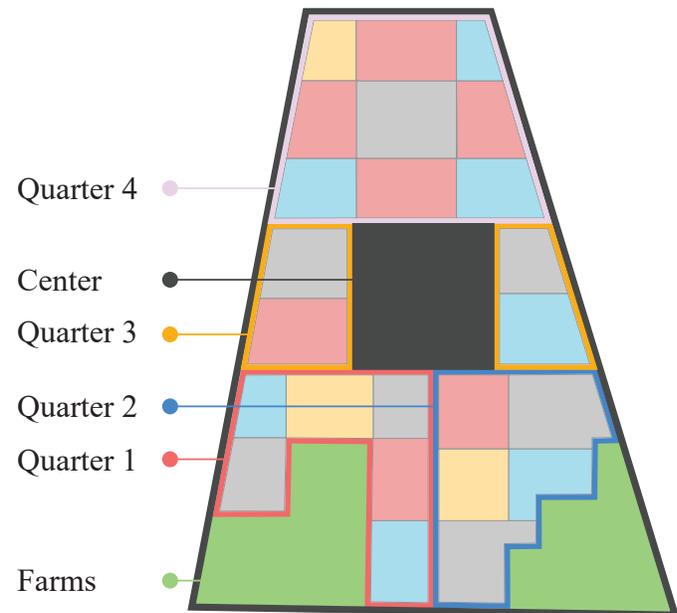
This system dictates that a resident must live in a town in order to own estate in it. This is to ensure that investments are happening within the Union community. This way, investors will empathize with the other residents and have firsthand knowledge of the circumstances—whether good or bad—in a Union.

A resident may own a maximum of one estate in each color group, i.e. if a resident owns an investment in a red block, diagrammed to the right, the resident may only own one investment per red block, and no where else.

Residents may own their home if they live in a yellow block and may choose one color for investments. It is against the Union's policy for a resident to own investment in yellow blocks.

Anything in the center is owned by the Union, since it is public space, and may not be bought by any of the residents.

Money generated in the Union will go back into maintaining and operating it. Any extra profit will be given to the investors of the Union. However, investors of the Union must be social entrepreneurs who do not expect to breakeven in a rapid manner. This is further explained in the next chapter, [Feasibility](#).



Home Ownership and Investments, *Rafa Barakat*

## Logistics, regulations, and policies of business ownership and operation

Thoughtful management should take place even when deciding who is allowed to operate a temporary business, such as a food stand or a small kiosk, during the construction phase. Businesses that will be able to provide necessities to workers will have the priority to qualify. After that, if more than one business of the same nature apply, a first-come-first-serve system will be implemented. This is to eliminate monopolies and to ensure that some stay and serve the community in the existing camp. In the case of this project, five kiosks sell drinks, snacks, cigarettes, etc. Two will have permission to transfer to the Union and will commute with the workers until permanent structures are available, while three stay in Oncupinar and serve the rest of the community.

In addition, three families are documented to sell food from their homes. There may be more, but these are the ones whose stories have been broadcast. One of these could sell products in the Union. This will create a temporary monopoly, as the management will promote the industry to create job opportunities for people who can cook. Once management makes the announcement that the Union has vacancies for people who can serve food, many more families or individuals will apply. The first person to apply with the ability to create a competitive force in the food industry will be hired.

Meanwhile, more vacancies will be available for farmers or people who want to pursue a temporary or permanent career in agriculture. They will commute with the rest of the workers until substantial completion of first phase occurs.

Prior to the substantial completion of the first phase, each farmer or prospective farmer will be given a farming lot. The lots will be distributed as follows:

- Names will be picked at random by SEMT for each lot
- The people with better (i.e. closer proximity to commercial areas, etc.) lots will be given smaller lots
- Exchanging lots with another farmer is permissible if both parties sign on the agreement and hand it to management

Social phasing for the first quarter must be complete prior to the substantial completion of the structure. This means that management must be complete all necessary vetting and assignment of spaces prior to relocation. Consequently, all necessary business shall open soon after substantial completion occurs.

When the first group relocates, each individual or family will reside in the dwelling assigned to them, and people who were deemed eligible to own a commercial space are to open their businesses. Preparation for the businesses is to occur prior to the relocation. Employees who were assigned to work on the construction of the first phase, whether laborers, professionals, or management, who were also approved for a business may be given extra time to prepare for the business.

To further understand how this will work, think of Family 1 and Individual 1. Family one is comprised of a father (Ahmed), a mother (Leena), their three children all under the age of nine (Adam, Sa'ad, and Ban). Ahmad has some experience in clothing manufacturing. He is assigned a spot in the clothing factory. His position will be decided by the BEMT, and will be based on his expertise, and possibly a test or interview to determine his qualifications.

His wife, Leena, applies for a space to open a nursery school that would accommodate her younger child, Ban. Leena has a 2-year degree from a Syrian college in Business Administration and pitches her plan to BEMT. She gets the approval prior to the substantial completion of the first quarter. Consequently, she is assigned a commercial space that is suitable for such a business as soon as her family relocates to the quarter. Since all necessary businesses were already approved prior to substantial completion of construction, there should be an elementary school open for Ahmad and Leena to put their two other children when they are at their jobs. This example shows that soon after group 1 relocates, the father and the mother will begin working, and thus generating money, their children are taken care of as their youngest daughter, Ban, will be at the nursery care where her mother works, and the two older children will be at school, as children ought to be in a traditional setting.

Individual 1, Amal, in this example has no intention of starting up her own business, so she applies for a job at a restaurant. At this point, Amal has no family and a job at a restaurant is financially sufficient for her. A few years later, Amal, finds herself getting better at this job, and decides to open her own restaurant. For cases such as this, several commercial spaces must be left underutilized for a while, to give other people the opportunity to grow after they have lived in the Union for some time. Since the quarter is now operating and an internal economy has been established, new entrepreneurs no longer have the privilege of rent-free space for the first few months. Amal must make sure she has enough money to pay rent for the commercial space. However, Amal must go through one more step before establishing a business. She must get approval from management, who should have already established a set of regulations for the businesses that will be allowed to occupy the vacant commercial spaces. Regulations may determine the types of businesses allowed in the area, for instance. If management sees that opening another restaurant would create an abundance of restaurants in the area, management may then dictate that her business is unnecessary in this area. Now, Amal has two options: if the expertise she gained from her previous job was in business in general, she may choose a different idea that the area needs; if the expertise she gained from her previous job was specific to restaurants, she may choose to open a restaurant in an area which is lacking thereof.

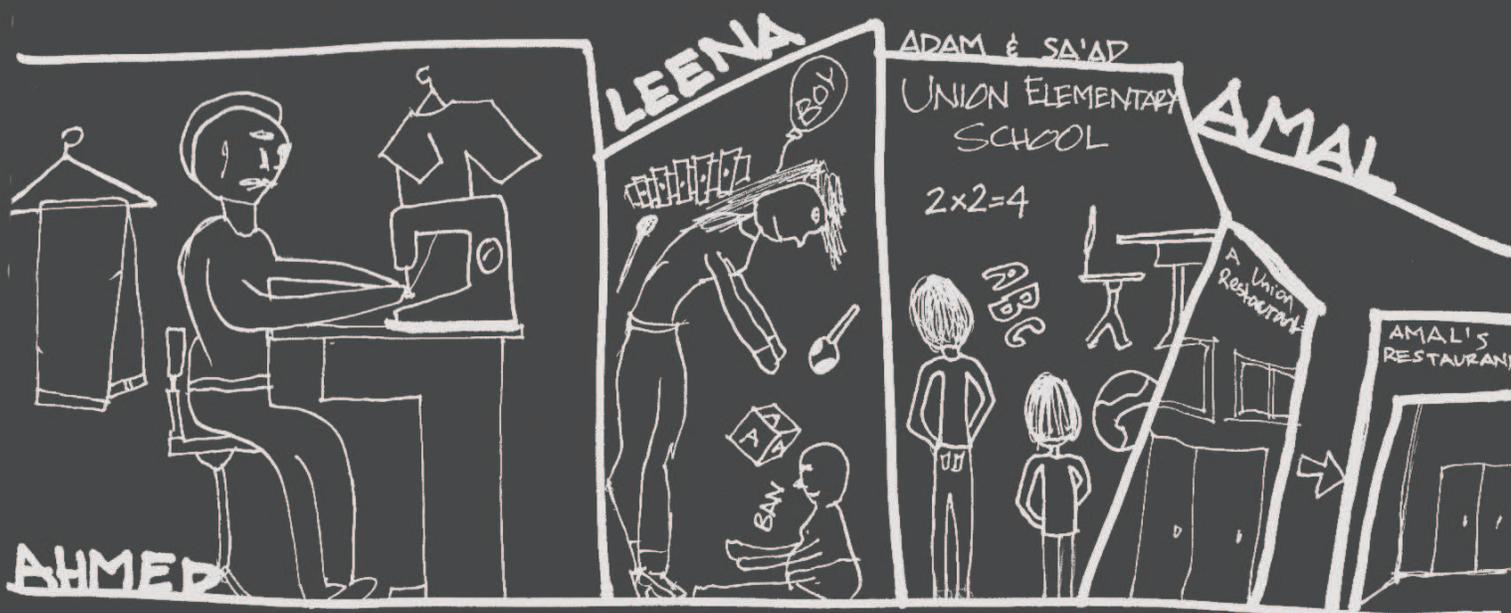


Illustration of Family 1 and Individual 1, Rafa Barakat

# FEASIBILITY



# 5

# FEASIBILITY & STRATEGIC FRAMEWORK

The idea of creating a long lasting *refugee town* has been proposed by many experts. The Union is a development just like any other big developments that happen all over the world. The town itself is in no way exclusive to refugees, however, the systems discussed in the previous chapters of this book are what makes this city appropriate for the cause. The below image is a brief illustration as to how this project is feasible if we look at it as a development with a thoughtfully implemented system that will only work if investors are investing in a humanitarian cause not merely a business deal that is meant to multiply their net worth.

The illustration quotes the UNHCR, which found that while refugee situations used to last an average

of nine years in 1993, they increased to 17 by 2003. This information is not only troubling, as in 2013, that number probably went up by much more than the previous 53%. The number had already increased by more than half prior to the Syrian conflict, which based on research shown in previous chapter, began in 2011 and has since then caused a major refugee crisis.

Another quotation in the illustration reads, "The message is clear: large scale disasters require long term solutions." Katherine Allen wrote this in her article, called *Beyond the Tent: Why Refugee Camps Need Architects (Now More than Ever)* in 2013. Many seem to share Allen's belief that a longterm solution may be the only solution. Shannon Pfohman, Head of Unit, Advocacy and Policy at

“ The average of major refugee situations has increased from 9 years in 1993 to **17** years at the end of 2003.



The Pearl, Doha, Qatar  
Cost: \$15 Billion  
Population: 45,000



New Cairo Green City  
Cost: \$6.9 Trillion  
Area: 3,6000 km

VS

“ Receive 1 month free rent when you lease a property in [...]  
Receive 2 months free rent PLUS your cooling charges paid for a whole year when you lease a property in [...]

“ A self-sustained city with various sizes of villas and apartments viewing green spaces and parks, community centers in all neighborhoods[...] plus 300,00 sqm of a wide variety of entertainment and retail units.

“ The message is clear: large scale disasters require **long term solutions**.



Europacity, Paris, France  
Area: 800 sqkm  
Years to Complete: 7-8 years

“ An urban form that combines dense city with open landscape, exploring the urban and green potentials of the site at once.

“ If there's anyone qualified to consider the long-term when rebuilding in post-disaster situations, it's **architects**. And if there's anyone with a **moral obligation** to provide safe, affordable, and sustainable shelter, it's most definitely **architects**.

**BPS** People Planet Profit



## People

This project serves the refugees by normalizing their lives, giving them the opportunity to have careers, an education, access to health care, and long term housing.

## Planet

This project is designed with consideration to the planet. It not only integrated the built environment with nature, but it allows for residents to live a long term life with minimal CO and NO emission. It also collects and recycles water.

## Profit

The system implemented in this project allows for revenue to be made through taxes, rent, and home ownership policies, as well as production.

## Phasing

The phasing system allows for all of this to become possible as soon as the idea is approved. Job opportunities will be open, income tax will be paid, and the evacuation from the unenvironmental camp will have an immediate positive impact on our planet.

## Finances

**\$12.5 Billion** was spent on Syrian refugees by Turkey alone as of October 2016

“ Canada  
Mustafa, his wife and their four children – were taken on a shopping expedition to stock up on winter gear

**\$19.2 Billion** spent by Germany in 2016 alone

VS

## Revenue

“ It is a fact that **givers are happier people** than non-givers. According to the Social Capital Community Benchmark Survey, a survey of 30,000 American households, people who gave money to charity in 2000 were 43% more likely than non-givers to say they were "very happy" about their lives.

- Production
- Rent
- Taxes

## Education

WHAT WOULD LITTLE AYLAN HAVE GROWN UP TO BE ?



“ Estimates suggest that increasing the high school graduation rate in the United States in 1990 would have resulted in nearly **100,000 fewer crimes**

## Education



When I picture my future, I see nothing.

More than **400,000** Syrian refugee children living in Turkey **are not attending school**

and Policy at Caritas Internationalis said in an interview, "it is the challenge of not just focusing on short term solutions, but really thinking about development and cooperation to the medium and long term [solutions], and not just focusing immediately on geographic areas that are trying to scale up certain areas of intervention now because of the sense of urgency."

The last quote in that section, also from Allen's article, talks about rebuilding in post-disaster situations. However, in areas where rebuilding is not an option and will not become one for a relatively long time, like Syria for example, it is the architects' obligation to find architectural solutions. As this thesis has hopefully proven, an architectural contribution, merged with assistance from various other areas of expertise, can go a long way in providing a longterm solution for such disasters.

## Union as a Development

The illustration demonstrates different developments around the world that could adopt the system in this thesis to create a Union. The first example is The Pearl, set in Doha, Qatar. It is a \$15 billion development that is offering two months free of rent, in addition to a year of free cooling (note that Qatar is a country in the Gulf region where temperatures are extremely high and thus its residents need cooling and not heating). The Pearl is a manmade island that comprises of aesthetically pleasing seaview apartments, commercial spaces that fulfill the island's residents' needs in addition to retail shops, restaurants, and entertainment that serves the entire city. People from all over Doha go to the island for pleasure. While The Pearl can only accommodate 45,000 people, it is a high-end development built on a manmade island. Taking that into consideration, we can establish that an investment of that amount can build a well-constructed, but not high-end development that can accommodate many more people. If we apply the concept of a Union to this island, jobs would be created from the beginning of the design process. Every job created by The Pearl as of now, would be done by one of its own residents, from security guards to business owners, from maintenance workers to the people working in seaview offices

in the office towers. Thousands of jobs have been created due to this development.

The next development portrayed in the illustration is set to cost a staggering \$6.9 trillion and is currently under construction in Cairo, Egypt. China has already invested \$35 billion into this project. Many more investors are putting in similar amounts, but it is worth noting that China's investment alone can build two developments of a similar size and quality to The Pearl.

The development includes various sizes of houses and apartments, many green spaces and parks, community centers in every neighborhood, and of course, retail and offices, serving the community and adding options of entertainment. Once again, the designing, building, and operating of this development will create many jobs.

The next illustrated development is merely conceptual thus far. The site is located in Paris and has a futuristic design that focuses on green areas and sustainability. It seems like a complex, innovative design that will incorporate novel ideas. However, even with all the hindrance that could be caused by such innovation, the project is expected to be built in 7 to 8 years. This shows that a much simpler project, especially when built in phases, will take exponentially less time. A single quarter could potentially be completed in a single year or maybe two, according to the size of the site and development.

## Finances

A Union should not be built on donations, as that would compromise its for-profit approach, strategy, and quality. However, investors of a Union should keep in mind that this is a humanitarian cause first and foremost. They should expect return on their money, nonetheless it should be understood that this remains to be a risk they are taking, just like any investment, and revenue will likely be generated at a slower pace than it would in an equally successful investment that is solely concerned with profit versus humanitarian causes.

From a business standpoint, risking an amount of money in an investment will surely lead to investors who care more about the success of the project.

The reason a person, company, or country that is capable of paying a large amount of money will consider investing in this project, as oppose to a traditional investment, is because the Union is based on a humanitarian cause. Arthur Brooks wrote an article in New York's *The Sun* stating that "It is a fact that givers are happier people than non-givers. According to the Social Capital Community Benchmark Survey, a survey of 30,000 American households, people who gave money to charity in 2000 were 43% more likely than non-givers to say they were "very happy" about their lives." The University of Michigan's Panel Study of Income Dynamics reveals that people who gave money away in 2001 were 34% less likely than non-givers to say that they had felt "so sad that nothing could cheer them up" in the past month. They were also 68% less likely to have felt "hopeless," and 24% less likely to have said that "everything was an effort." This applies to giving of all sorts. Studies show that 43% of Americans who donated their blood two to three times a year said they were "very happy", versus only 29% that did not donate blood who said the same thing.

Using the information communicated in this chapter, a logical connection can be made. As of 2016, Turkey had already spent \$12.5 billion, although some sources state that the more accurate number is closer to \$25 billion, on Syrian refugees. Because an official amount spent by Turkey on refugees has not been disclosed, let us assume it was \$15 billion. If \$2.5 billion of this amount was spent on emergency shelters in the first year, this leaves us with \$12.5 billion. The Pearl, which in reiteration is a manmade island that accommodates towers of high-end apartments and top-notch retail and entertainment units, cost \$15 billion. Logically, a development of a larger size and lower, yet decent, quality could have been now completed with just the \$13 billion that Turkey paid. If more investors were finance the project, it would have moved faster, meaning by now, it will be operating, and will soon begin generating revenue.

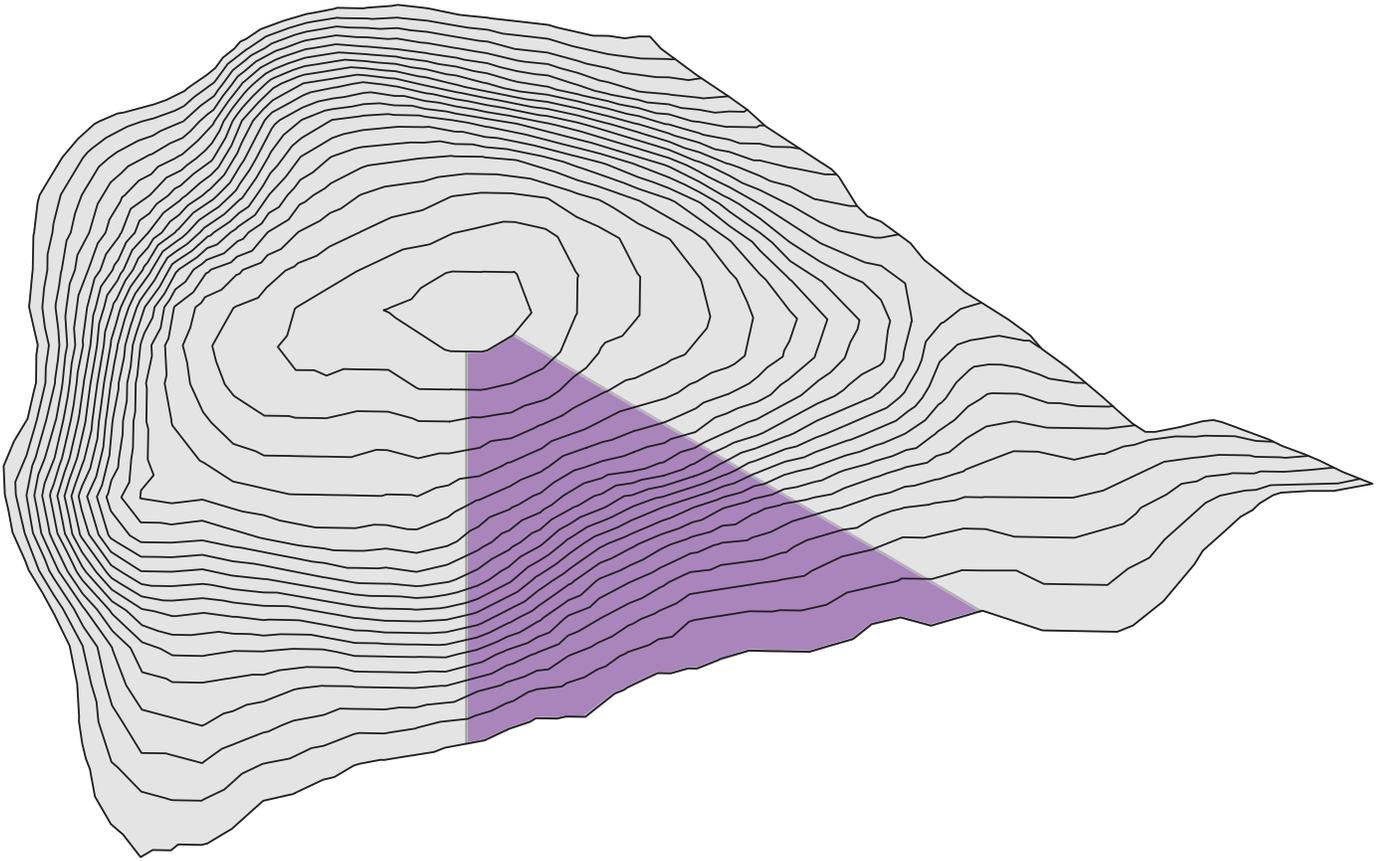
## Three Ps

People, planet, and profit; these are the three Ps that if merged into any project, would result in the best outcome. The Union is a project for **people** in need. As shown in previous chapters, the Union also attempts to take the **planet** into consideration, by making means of transportation much more sustainable, and incorporating agriculture and many green spaces. Its principles also take wind and sun into consideration. As explained in the previous sections, the Union aims to generate **profit** for its investors, covering all three Ps that make for a project that takes all involved parties into consideration.

## Strategic Framework

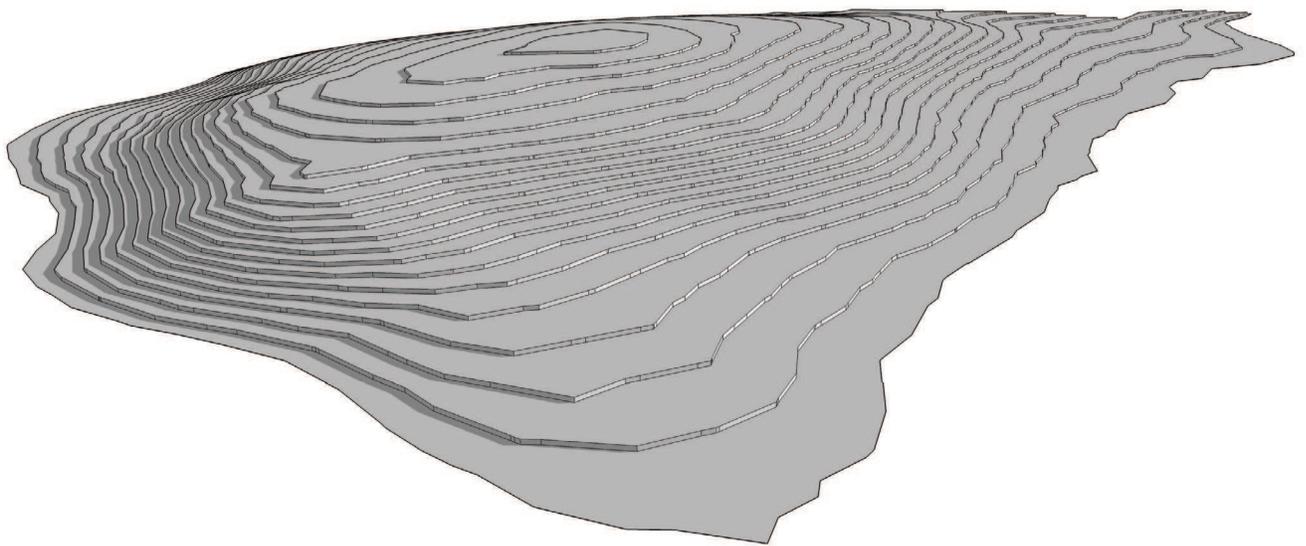
This section architecturally diagrams all the ideas discussed in this book. A hypothetical architectural design of the city inspired the **Union Logistics** chapter and became a critical part of it. From the research shown in the Project Overview chapter, this section will focus on Syrian refugees in Turkey.

As discussed in the **Project Overview** chapter, a site location, 30 minutes away from the current refugee camp in Oncupinar, was chosen for this section. It has also been mentioned that the site is a hill that peaks at 310 feet (95 meters) above its lowest point. The site was chosen for several reasons. Its west side borders a large body of water. Its challenging topography was chosen to demonstrate the theoretical success of a Union even if faced with architectural difficulties like such. The site is quite large to fit more than just the population of Syrian refugees, as it invites Turks to also take part in this development. Although it is preferred that they begin to relocate to the Union at first, it is recommended that they become a part of the city to advocate unity between the citizens of the host country and the refugees. It also forces interaction between the two cultures, allowing Syrians to integrate themselves in the Turkish community.



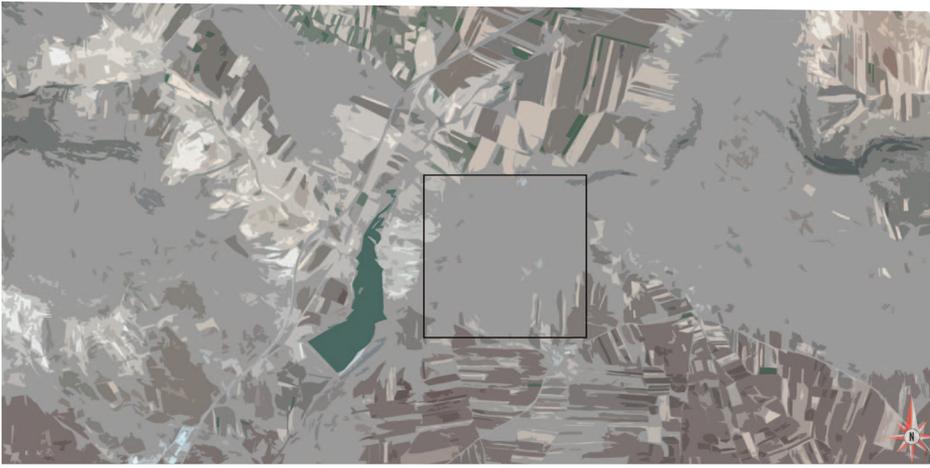
Site chosen for strategic framework, *Rafa Barakat*

The image above shows the site and its contour lines. The height interval between the lines is 5 meters (16'5"). The loop in the center of the site is its highest point, and will be the center of the Union city. The area in purple marks the borders of the first town.

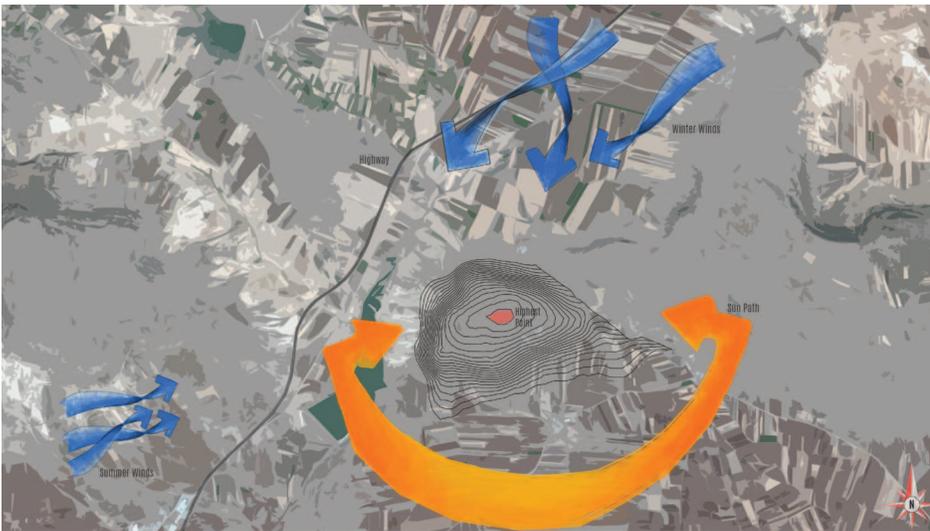


Perspective of site, *Rafa Barakat*

This perspective of the site shows the height differences in the site.



Oruçlu Resettlement Site, chosen site for resettlement, *Rafa Barakat*



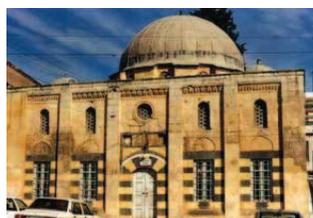
Oruçlu Resettlement Site, site analysis, *Rafa Barakat*



Oruçlu Resettlement Site, photographs of the site, *Rafa Barakat*



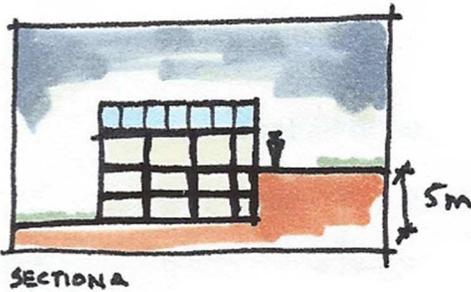
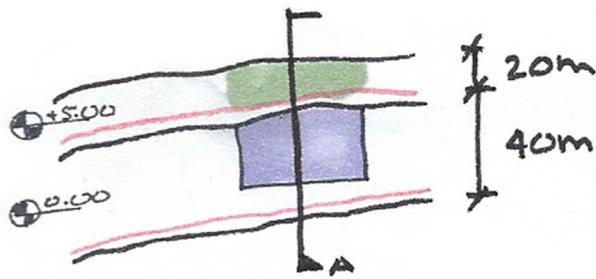
Oruçlu Resettlement Site, panorama of the site, *Rafa Barakat*



Kilis Province, architectural elements and geometry, *Rafa Barakat*

A thorough study was made to examine the site on which this Union prototype will be designed. On the next page, there are images of sketches drawn to study circulation in the site, building orientations, and even architectural details. In the bottom right corner, there is an image of a mosque with black and white stones aligned to look like stripes, this will be reflected in the Union shown in this chapter. The image next to it shows an intricate pattern, which will also be seen in the city. The colored arches seemed like they, too, can be designed in a more modern sense to fit this Union.

*The entire design to follow was an instrument made to come up with a set of principles that can be used to design a Union anywhere. Anything that is not mentioned in the **Union Logistics** chapter is not required in a Union. All of the following design decision that have not been dictated by the Union's principles are merely designer choices that were made for this specific Union in this specific site.*



Sketch 1, Rafa Barakat

This sketch shows the one solution to the challenging topography. Here, the ground is flat and terraced at 5 meters. Circulation occurs on the end opposite to the retaining wall, as the wall is covered by different functions, such as buildings. This method will be used in the project.



Sketch 2, Rafa Barakat

Illustrated above is a sketch showing possible building and circulation schemes. It shows a ramp on either side of the town block and smaller ramps within the block. It shows a possible solution to the topography in which a 5 meter height difference from the beginning of the town block to the end of it can be split into two flat areas separated by a 2.5 meter difference in height. The sketch also shows buildings oriented inwards, where there are green spaces meant for gathering. The layout of the buildings blocks winter winds and allows summer winds to enter the space. The buildings each have different architectural details but speak the same

architectural language and are all at a certain height from the ground.

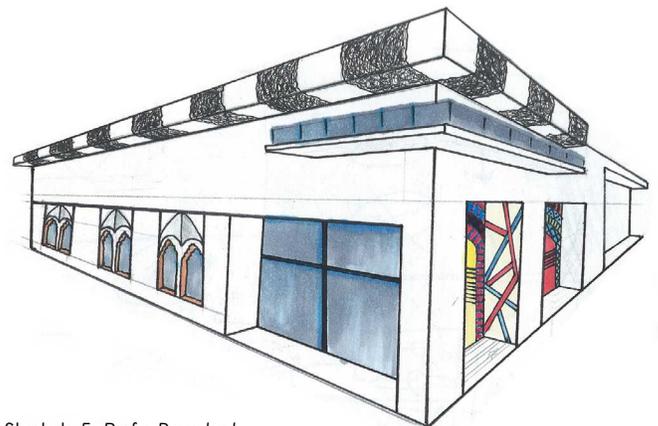


Sketch 3, Rafa Barakat

This is another sketch showing circulation within the blocks, between the blocks, and how they connect with the horizontal circulation on the above level.

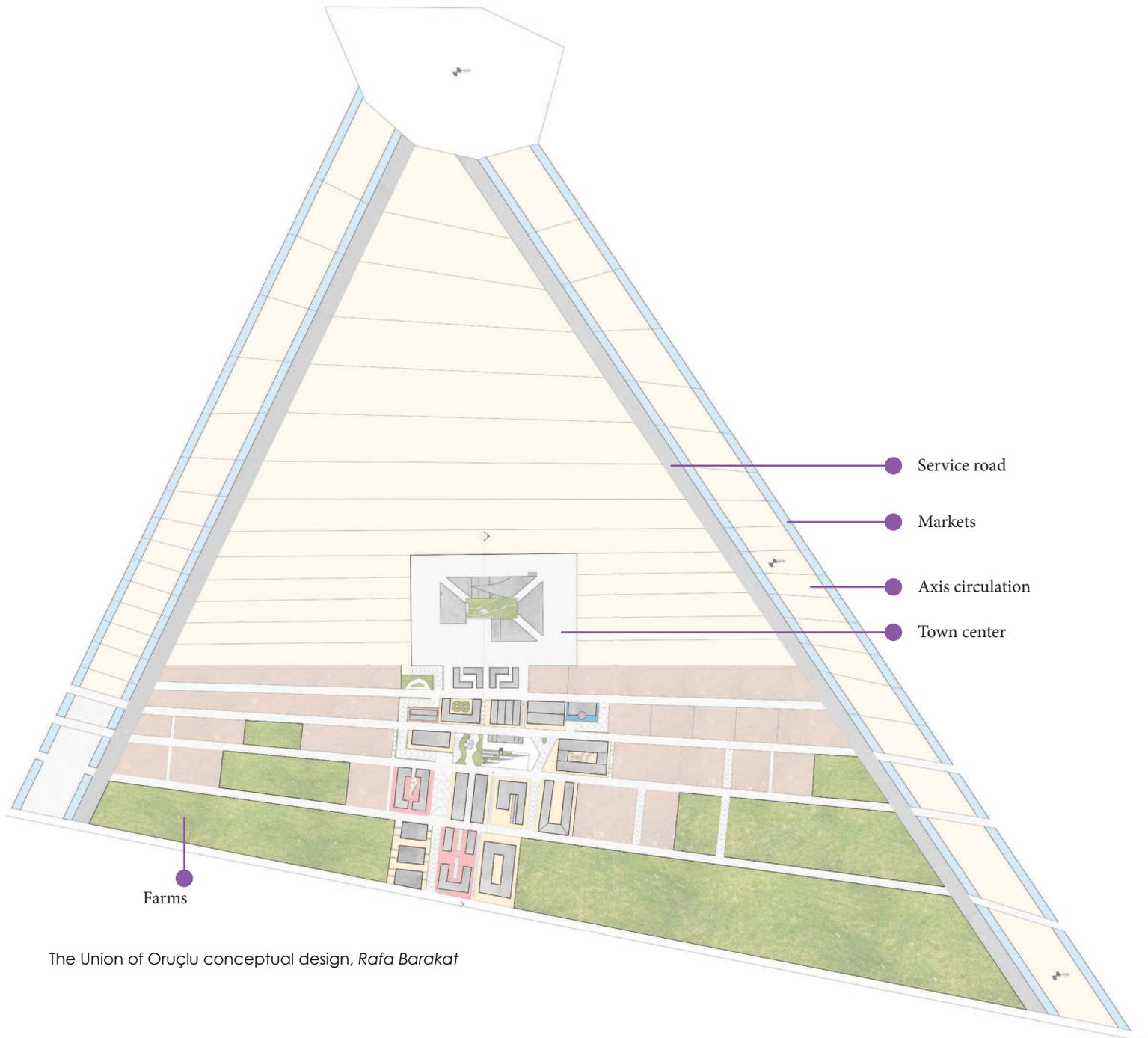


Here, a possible outcome connecting two blocks by a bridge (or in this case a running track) is shown. Once again, please note that both buildings have the same maximum height.



Sketch 5, Rafa Barakat

This sketch suggests a slight modernization to the architectural elements shown in the previous page.

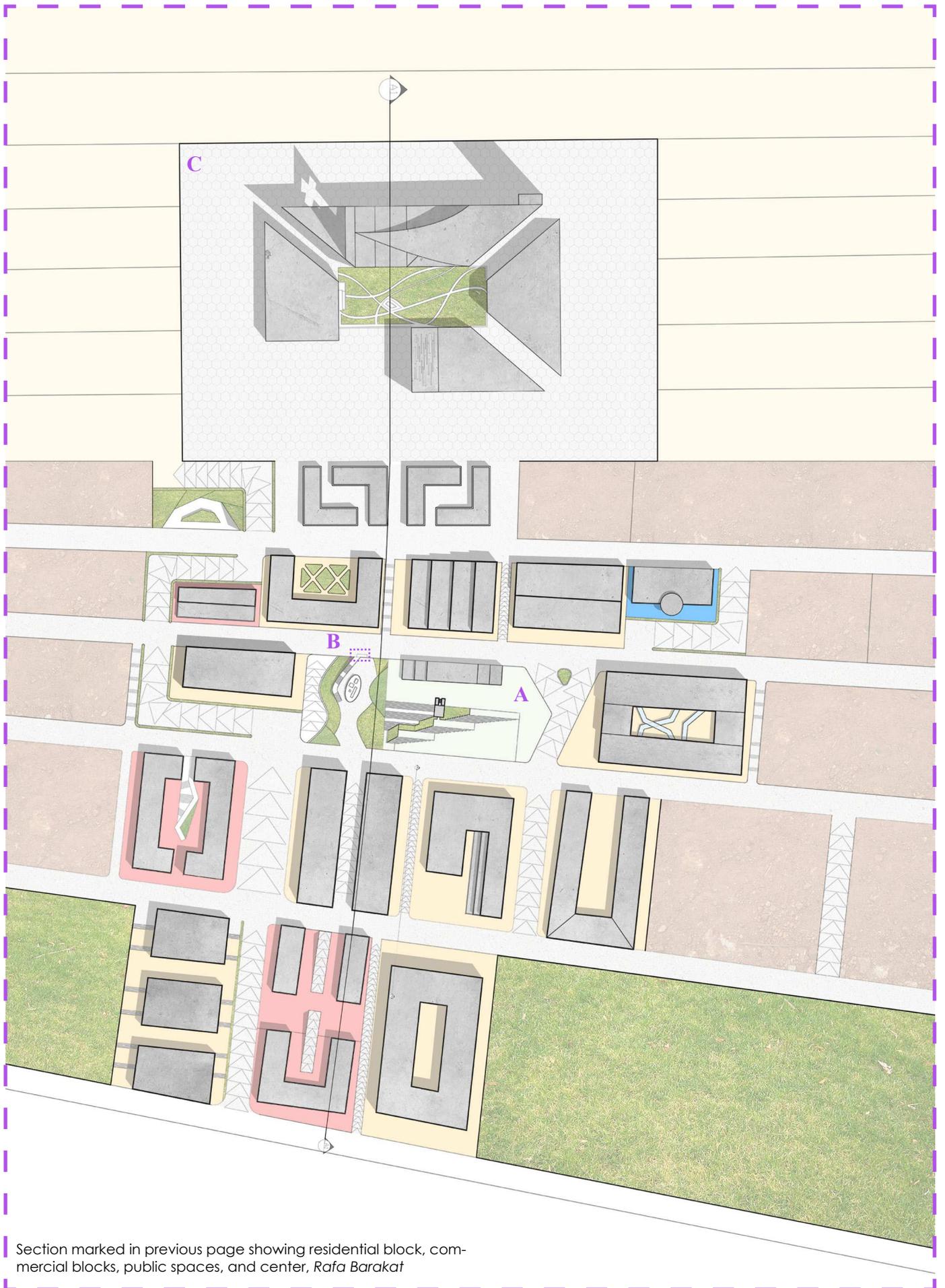


The Union of Oruçlu conceptual design, Rafa Barakat

This is a strategic framework diagram showing the ideas implemented on to the site. This shows that farm, which already exist on the site, the modified contour, and the conceptual circulation and buildings occupying a small part of the site. It also shows the center of the town. To the right and left of the town are two of the city's main axes. The axes also serve as traditional markets in the region called *souq* or *souk*. Although motor vehicles are not allowed in the souk, the service road is made for motor vehicles, including ambulances, shipping trucks, and other necessary vehicles



Souq Waqif, Doha, Qatar, Diego Delso



Section marked in previous page showing residential block, commercial blocks, public spaces, and center, *Rafa Barakat*

The image to the left shows the different blocks color coded by functional zoning. As per the standard colors of zoning, yellow is residential; red is commercial; blue is institutional (in this case the blue block is occupied by a small mosque or *musalla*).

The block marked with the letter **A** clearly illustrates the idea of lean zoning implemented in a Union. This has been discussed in previous chapters, but it is clearly demonstrated here. This block serves vertical circulation as it has two sets of wide stairs and a ramp to accommodate bikers, skaters, disables persons, baby strollers, and anyone else who needs or wants to use it. However, the block's large open areas, wide stairs, and green spaces make it a unique and appropriate space for social gatherings. To serve its occupants, the block also includes retail units. A small coffee shop appears in the center of the block, and a larger commercial building accommodates bigger retail stores.



**A**, Multipurpose plaza at the Union of Oruçlu, *Rafa Barakat*

The conceptual design on the left shows that although these buildings are designed predominantly around the basic shape of a rectangle, a wide variety of different designs was achieved. This is to show that simple architectural designs for such a project in no way necessitates monotonous building designs, in which all the buildings have the same plan and architectural elements.

Simple design initiatives were taken in this project to demonstrate that such solutions could provide intriguing spaces that enhance the quality of life for the city's residents. Such examples include the niches in the retaining walls. Public seating areas, equipped with artificial lighting to ensure safety after sunset, were punched in the walls to utilize and celebrate the retaining wall instead of thinking of it as an a structural element forced upon the design. Such niches exist at marker **B**, and another proposed one in the center. (Please refer to next page for images)

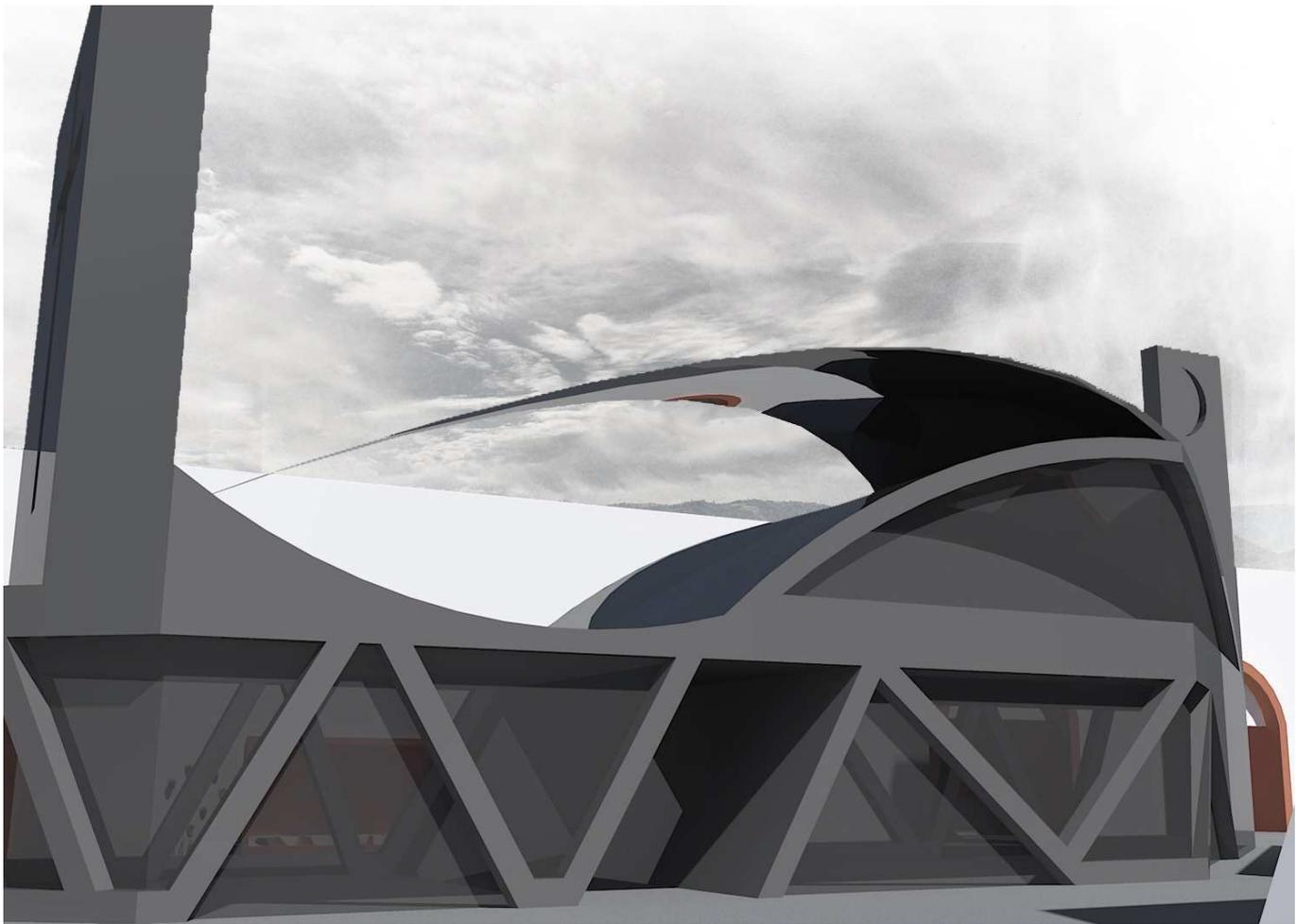


**B**, an inset niche in the retaining wall becomes a public gathering space, *Rafa Barakat*



Niche at the center is larger in space and includes concrete furniture rather than mobile chairs, *Rafa Barakat*

The center is a very important element in a Union town. It hold all the bigger institutions that serve the entire community. In this center, there is a church and a mosque separate by an open pedestrian path. The path leads to spaces like the above niche and small shops that are punched in the wall in a similar manner.



**C**, an inset niche in the retaining wall becomes a public gathering space, *Rafa Barakat*

The above image, marked **C**, communicates multiple ideas. First, thoughtfully study the culture for which you are designing. The population of focus in this project is Syrian. The population is predominantly Muslim but a considerable amount practices Christianity, and the culture itself holds on to religious values and generally practices organized religions. Consequently, a mosque and church in the center are prominent features of the town.

It is also clear that the architecture in the center is much more developed than the rest of the town. Since this project is meant to be built in a relatively rapid manner to house the refugees as soon as possible, the architecture of the buildings should not be too complex. However, this development aims to enhance the lives of its residents and thus does not shy away from modern, complex architecture in the center of the town.

The image shows an unconventional dome and *minaret*. The left side shows a cross punched in a large concrete block. However, both the church and the mosque, along with their symbolic elements are a part of one building. This conforms to the concept of a *union*, as it resembles a religious unity and conveys the message that religious differences should not divide the people of a Union—or anyone else, for that matter.

Through the glass, the niches in the retaining wall are clearly visible. The seating area in the bottom image on the left page can be seen on the left side of this image as well. The niches on the right side are the shops mentioned in the previous page.

The following images illustrate different architectural styles that were attempted for the Union of Oruçlu. They incorporate the architectural elements seen around the City of Kilis, in which Oruçlu is located.



Bird's eye view of a section that includes commercial, residential, and public spaces, *Rafa Barakat*



Apartment building designed with a more traditional style using arches, *Rafa Barakat*

The black and white stones, shown in an image of Kilis and a sketch, is seen in both imaged to the left embedded into a modern style building and a style of architecture that is more traditional to Kilis. The use of white and black is further reflected in the top image in different other forms where buildings are made of white stucco (stucco is the most prominent form of cladding in Kilis, as shown in photos of buildings in previous pages), but black elements are used in contrast. Intricate and colorful patterns are shown on the steps of the stairs and on arches in the residential building shown in the bottom image. Art is also incorporated on walls where murals are drawn. Notice the pattern used for the main entrance door of the apartment building in the bottom image. It uses the same design element shown in the photo to the right.



Apparel retail store, Rafa Barakat

The store in the above images uses the same design element for its door, but has a completely different architecture style. While this element was used in an arched door in the apartment building, here it is embedded into a modern style storefront. This image also shows a biker riding between buildings and an green space equipped with street lights.

The section shown below is cut through the plan shown in previous pages and illustrates the different levels of topography and how that was dealt with architecturally. It also acts as a transect, showing the different layers of a Union. The mixture of various, yet equally dense levels of functionality are clearly visible.

The highest point is the center, which comprises of the religious temples, a community center, management offices, and other central functions that are required by the entire community.

The orange niche shown in previous images can also be seen in this section, punching into the retaining wall at the left-most end of this image.

Separated by a green space is a commercial building that accommodates offices. A strip of horizontal circulation is shown to the right of that building. At 10 meters, there is enough space to accommodate an ambulance and pedestrians safely.

At a lower level, an apartment building is shown behind stairs that are equipped to lead able people to the upper level.

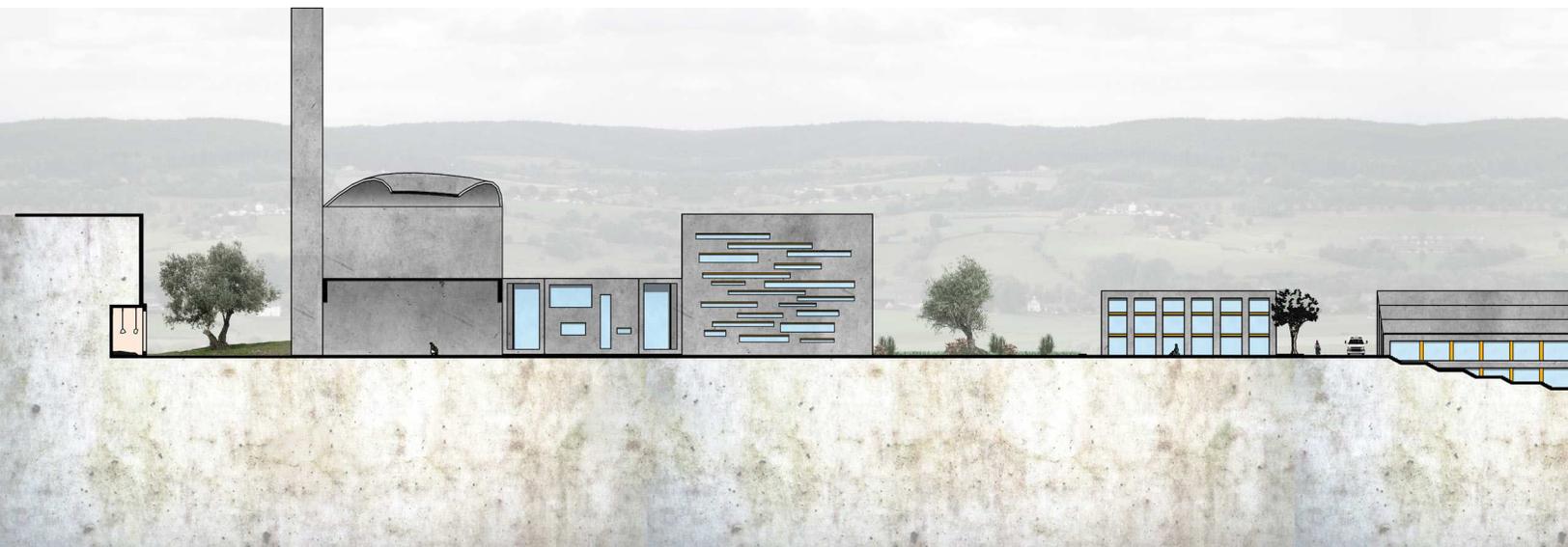
To the right of that is a lower level showing a designated public park. However, a significant amount of greenery and public spaces is spread throughout the entire section.

Next to it, the section cuts into another apartment building, showing the different areas and qualities

of apartments in a single building. Each apartment building should be architecturally designed to accommodate people of different socioeconomic class, as well as families and single people. Therefore, a variety of high-end, low-end, large, and small apartments should be found in each building. This was mentioned in the [Union Logistics](#) chapter and is illustrated in this section. This section also shows that the lower level on the left end of the building has an open floor plan with a high ceiling. This space could be used as a commercial unit, another example of how functional zoning is not meant to be stringent, but is flexible based on the needs of the residents.

Like any other level, there is always horizontal circulation to the right of the town blocks. Here, we can see a group of people gathered on the road. This is possible due to the system of transportation in the city. As mentioned earlier, residents must rely predominantly on walking and biking in the city. The 10-meter-wide brick roads allow for such gatherings to happen safely. It is also wide enough to accommodate the couple that is walking towards the commercial building at the lower level.

Here, we can see the 2.5 meter difference on the same level, discussed earlier in this chapter. The commercial building on the left of the block is slightly higher than the one to the right of it. There is an open area separating the two, allowing for a wind envelope the buildings, and sun to penetrate them. It also serves as a circulation space within the block and allows for windows on all four side



of the buildings. You can clearly see the different interiors of the buildings, even though they are both commercial buildings and are located on the same block. While the building on the left can operate as a restaurant with half a story on the upper level, the building on the right seems to house offices, and could potentially have a different function in its left half.

The right-most section of the image shows a traditional car on a road. This road is not part of the Union of Oruçlu, it does, however, surround it.

## This is the Union

The Union is a development that could potentially be built anywhere. It is a combination of architecture, humanity, and a system put in place to allow it to be utilized by refugees in need.

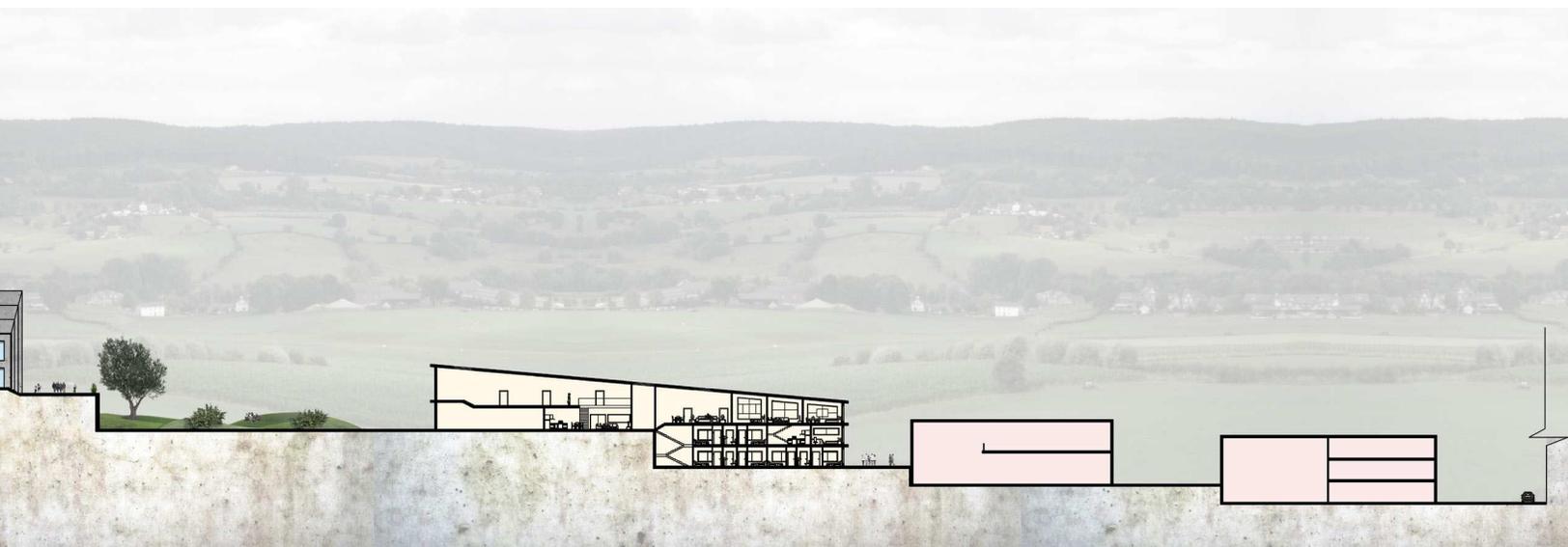
The Union is a proposal of a possible longterm solution for a large scale disaster. It is a project that aims to normalize the lives of displaced people who have lost hope in ever returning home.

This thesis does not only attempt to find solutions that benefit the refugees, but also their host country and its citizens. Countries are paying billions of dollars and are facing challenges to find funding. This project allows for revenue to be generated, jobs to be created, and abilities to be utilized. It will manufacture merchandise and offer services, professional and otherwise.

It will provide education, which statistically reduces crime rate exponentially, ensuring a safer habitat in the host country.

More often than not, the citizens of the host country will be dissatisfied with an increasing population of migrants and refugees. Usually, the first concern they have is that the migrants and refugees will steal their jobs. In a Union, jobs are created specifically for the refugees, to reassure citizens that refugees will have a positive impact on the country, rather than the usual negative one.

This thesis remains to be a work in progress. It is the first edition of many, and it will continue to get refined until the proposal becomes more detailed and more efficient.



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A Master's of Architecture thesis project proposing a longterm solution for large scale disasters.

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