Dignified through self-determination:
Using space | flows
The case of UNHCR refugee camps

PROLOGUE AND PERSONAL MOTIVATION

L.S.   Delft, June 2021

From an early age I have been interested in history, war, peace, politics, societal movements, natural sciences and technique. After graduating from high school, I decided to study Architecture and the Build Environment at TU Delft, since this study combines societal issues and technique in a comprehensive way. In the years following my freshman's year, I delved into both political/societal and technical topics by following both honors and minor courses regarding civil engineering at the one hand and political science, history and philosophy on the other hand. Following on the interest in politics and societal issues, I also decided to start the master Crisis and Security Management at Leiden University, where I graduated last year with a thesis on the Chinese Belt and Road Intiative and the reaction of the EU (The European Union and the Belt and Road Initiative; A Research Towards EU Actorness). Besides this study, I initiated "Studenten tegen Corona" together with a fellow student. This intiative aimed to use the thinkpower and drive of students of all diciplines to aid organizations (both governments and companies) during the first Covid-19 related lockdown. This year, I hope to graduate successfully from Urbanism on a topic that incorporates both fields: (UNHCR) Refugee Camps. This project focusses on a rarely addressed interface between Crisis management and Urban design while (hopefully) fostering the living standards of camp inhabitants. With these aspects in mind, I hope to make the world a little better for the most unfortunate while adding knowledge to an understudied interface.

Yours sincerely,

Samuel Hartman

content

PART 3 | DESIGN AND ASSESSMENT

PART 4 | REFLECTION

ABSTRACT

In a world of rapidly rising numbers of forcibly displaced people, most refugee/IDP camps are designed as short-term shelter facility when no alternative is available. However, the average time a United Nations (UN) planned refugee camp functions, is seventeen years. This temporal disparity is not necessarily a problem on its own, however during these protracted situations the need for normalcy, perspective and especially dignity grows.
Besides a reduced level of livability, a lack of dignity also leads to both physical and psychological health issues. This leads to the main aim of this project, namely, to enhance dignity in planned camps. Taking the mandate of the UNHCR into account, the focus will be on UNHCR planned refugee camps. Based on a literature review conducted in the theoretical framework, the premise of this graduation project is that dignity is positively influenced by self-determination, which in turn is enhanced by spatial self-determination and (informal) economic activity in a situation where first needs (e.g. food, water, shelter) are met. This results in the main research question: "How can a modular framework of interventions enhance a sense of spatial self-determination and foster (informal) economic activity in UNHCR planned refugee camps while maintaining a non-permanent character and remaining adaptable to scale changes?". This question will be answered through eight sub-questions that reflect the different phases of the iterative 'analysis-design process' of this project. In this process four methods will be used to answer these questions by providing insight in the involved concepts, current practices and how (informal) economic activity and/or spatial self-determination is improved in other (urban) contexts. These methods are: a literature review, a best case review, interviewing and a multiple case study (using the Syrian Conflict as umbrella case).

The final product of this graduation project will consist of two perspectives, a flow-related perspective and a spatial design perspective. With regard to the flow-perspective, a guiding principle for each UNHCR camp construction phase to enhance foremost (informal) economic activity and to a lesser extend spatial self-determination is presented. Besides, a strategy consisting of multiple modular interventions on how to implement each of them is included, using Qushtapa Refugee Camp as test-case. With regard to the spatial perspective, three frameworks of design-principles are given. Each framework enhances (informal) economic activity and/or spatial self-determination in the context of a UNHCR planned refugee camp on a specific scale (communal scale, block/sector scale and camp/settlement scale). Regarding all three frameworks, a design is made in Qushtapa Refugee Camp, including a strategy on how to implement them throughout the standard UNHCR phases, to test and illustrate the design principles. Both perspectives have a modular nature. However, they also have multiple interfaces and can be integrated into one another.

In general, all proposed interventions are deemed realistic by an expert panel and regarding three different topics, material wise, labor wise and with regard to the UNHCR-Mandate and UNHCR standards. Last, since the UNHCR strives to provide the same 'service' everywhere, the proposed principles and designs, may also be applicable in other cases than cases relating to the Syrian conflict.

1

PART 1 | INTRODUCTION

INTRODUCTION

INTRODUCTION

"This single garment that I wear. The sweat and grime it bears. Gives me now some status. Some identity, I know now who I am with others with whom I sit and talk and sometimes weep. We're all the same each branded with the name Refugee. This plate I hold stretching out both hands for rice from the great cauldron in the courtyard of a school stills my hunger of a certain kind. Soon appeased unlike the hunger to be free of fear and danger. A few folded clothes for a pillow, lying on a cement floor children's desks mark my boundaries I'm at last in the safety zone neutral territory displaced together with a hundred thousand or more human beings, all refugees." (Jean Arasanayagam, 1983)

1.1 Context and Problemstatement

Rahul Chandrashekhar Oka (2014), was residing in a refugee camp (Kakuma Refugee Camp) in Kenya on June 11, 2011, when news entered the camp that asylum applications for the United States (US) of a hundred families were denied, smashing all hope on a better future. As soon as the news reached the camp, the camp fell into a state of general disillusionment. As a surprising reaction to this situation, Oka (2014) witnessed in the following days how purchases of so-called 'non-relief' products in informal shops, such as sugared tea, soft drinks and flavored yoghurts grew and then, after the most intense emotions faded away, decreased again to normal standards. When asking around in the camp to understand this phenomenon, he found out that buying these luxury products gave people a sense of normalcy and dignity. This phenomenon does not stand on its own. In situations where people are forcibly displaced, normalcy and dignity seem to be out of reach (Oka, 2014). Especially in camps for refugees or Internally Displaced People (IDP) (people that still reside in their home-country, but that fled their home region) a sense of human dignity is often far away (Oka, 2014).

In 2019, worldwide 79.5 million people were forcibly displaced, almost the population size of Germany (roughly 83 million people) (United Nations High Commissioner for Refugees [UNHCR], 2019). These 79.5 million people are divided by the United Nations (UN) in Venezuelans that are displaced abroad (3.6 million people), asylum seekers (4.2 million people), refugees (26 million people) and so-called Internally Displaced People (IDP) (45.7 million people), people that are forcibly displaced from their homes but still reside within the borders of their home country (UNHCR, 2019). In the past years, all numbers have been rising fast (see figure 1.1). In 2018 and 2019, for example, respectively 10.0 and 10.6 million people became extra displaced on top of the existing number of displaced people (UNHCR, 2019).
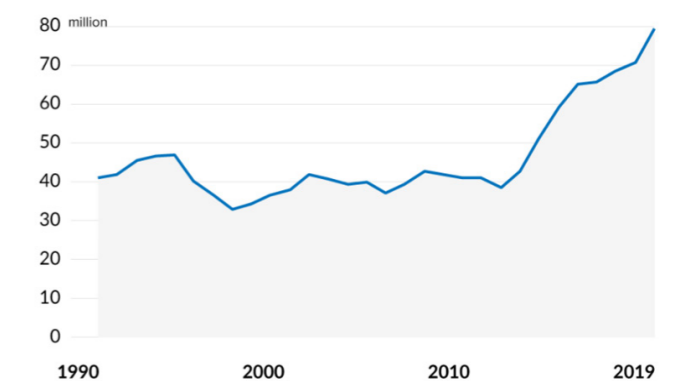
Figure 1.1, the number of focibly displaced people. From *"UNHCR",* 2020

There are several options for displaced people to reside (UNHCR, 2020). However, most of these options can be divided in two main types, namely, accommodation in urban areas (e.g. accommodation in non-functional public buildings, shared accommodation and informal types of settlement) and accommodation in the form of camps. Camps, again, can be divided in two main types: planned camps (see figure 1.2), which are usually planned and managed by a government, NGO (Non-Governmental Organization) or the UN (United Nations) (through the UNHCR or the United Nations Relief and Works Agency for Palestine Refugees in the Near East [UNRWA]) and self-settled camps, which are built by the inhabitants themselves (see figure 1.3) (UNHCR, 2020a). Of all displaced people, about 8 %, or 6.6 million people reside currently in camps (UNHCR, 2020a). 4.6 million people hereof stay in planned camps, the other 2 million people stay in self-settled camps (UNHCR, 2020a).

Camps can be defined in different ways, using different perspectives. However, Turner (2016, p. 140) sees camps as places of exception that are defined through two perspectives: "spatially" and "temporally". There are contrarities along both perspectives. From a spatial perspective, camps have a clear border, however, inhabitants and 'locals' are not bounded by these borders and move in and out of camp (Turner, 2016). From a temporal perspective, camps are supposed to be temporary, however, the average life-time of a refugee/IDP camp is 17 years with outliers of even 72 years (Palestinian camps erected in 1948

in Lebanon and Jordan) (De Rooij, Wascher, and Paulissen, 2016.; Turner, 2016). This can hardly be called temporary anymore. This last disparity is striking because it leads to a situation where camps are perceived and built as temporary structures, but in reality, are not (Turner, 2016). Turner (2016, p. 142) calls this phenomenon the "undetermined temporariness" nature of camps. Although this disparity is not necessarily a problem of its own, it does contribute to a variety of problems because both the physical and non-physical structures in camps are usually not designed to last for a prolonged period of time (Cullen Dunn, 2015; De Rooij, Wascher, and Paulissen, 2016; Turner, 2016). An example where this is illustrated is the UNHCR (2016) handbook on shelters. In this handbook different shelter types are presented, however the indicated lifetime of the documented shelters, ranging between one till eight years, is well below the average camp-lifetime of 17 years (De Rooij, Wascher, and Paulissen, 2016; Turner, 2016). Although, ad hoc physical problems related to the protracted lifetime of camps may be grave, they are usually on the 'priority list' to be solved, since most policies aim to solve crisis and short-term life-threatening problems, reflecting the strict mandate of the UNHCR (see next page). However, this exclusive and constant focus on short term problem solving for prolonged periods of time without granting inhabitants agency of any kind (Dynes (1994, p. 142) refers to this as a "military model" of crisis management), results therein that other needs of people including the need for dignity and normalcy are not met (Oka, 2014). Oka (2014, p.

Figure 1.2, planned Syrian refugee camp in Turkey. From "*Archdaily*", by T. Koch, 2019

Figure 1.3, self-settled camp near Calais, France. From "*CNN*", by P. Huguen, 2016

MANDATE OF THE UNHCR

The mandate covers:

refugees

returnees

stateless people
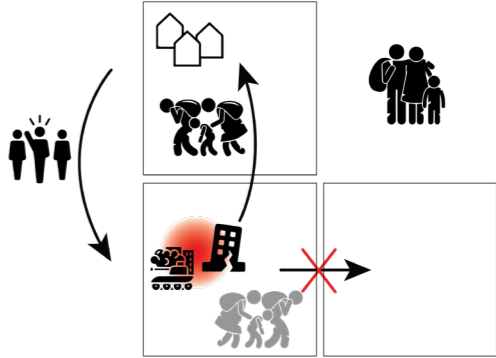
The mandate does not cover:

Internally Displaced People (IDP)

Tasks:

The UNHCR argues on behalf of people that do not have a state to do this for them

The UNHCR ensures that states comply with international obligations

The UNHCR is competent to oversee all info on refugees
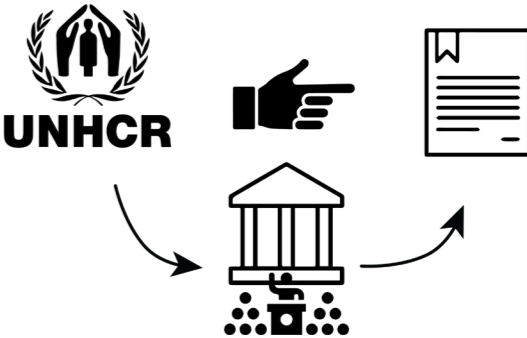
The UNHCR provides and enhances:

Relief distribution

Emergency preparedness

Special humanitarian activities

Broader development work

Registration and documentation for people falling under the mandate
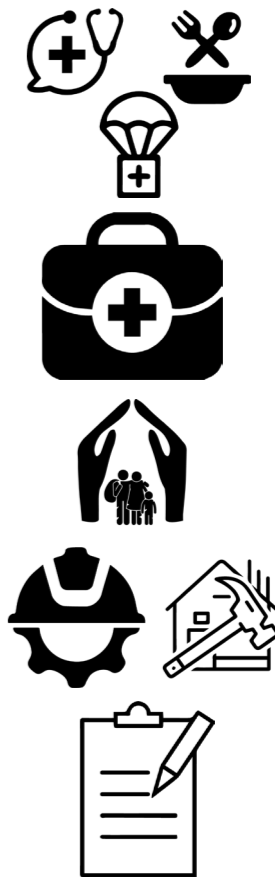
Information based on UNHCR, 2003

32) states about this that
"[a]s temporary solutions to disaster, the policies are intended to ensure refugees' survival, not to prompt discussion of normalcy and dignity". This again leads to dissatisfaction, which may in turn lead to more controlling measures. In the conceptual framework (see Figure 3.1) this vicious circle, feeded by an exclusive focus on efficiency and order is called the 'military model', based on Dynes (1994, p. 142) definition of this kind of crisis management. Agamben (1998) acknowledges this lack of dignity in camps and adds that there is only 'bare' or 'naked' life in camps, deprived of all agency or room for any kind of self-determination. In her essay 'The Failure of Refugee Camps', Cullen Dunn (2015, p. 2) goes even further by writing "Camps keep refugees alive, but they prevent them from living.". Although these notions are relativized by Turner (2016) and Ramadan (2013), based on the idea that situations in camps are often not as black and white as they seem and that informal structures in camps often compensate to some extend for these deficiencies, it remains a powerful recapitulation of reality. Based on what is widely believed to be Kant's understanding of dignity, namely that treating humans with dignity, is to let themselves determine their destiny (McCrudden, 2008), one could pose that this absence of agency and the 'undetermined temporariness' nature of camps leads to a lack of dignity.

1.2 Project Aim, Research Question and Process
Besides influencing general livability and quality of life, dignity also influenced both physical and psychological health (Jacobsen, Oliver, and Koch, 2008; Khatib & Armenian, 2010). Therefore, the neglect of dignity in camps and the forthcoming lack of it, forms a major problem. This leads to the aim of this thesis, namely, to improve the dignity of UNHCR planned refugee camp inhabitants. However, considering the constant state of 'undetermined temporariness' in camps, which reflects the strict mandate of the UNHCR limiting their work to life-saving, healthcare and education only (UNHCR, 2003), it is necessary to propose

interventions that foster dignity but respect the temporary character of camps (UNHCR, 2015; De Rooi, Wascher, and Paulissen, 2016). Next to this, for feasibility reasons, only cases relating to the Syrian Civil War are included in the analysis and testing, thereby also limiting the scope of the outcomes of this graduation project.

Based on the literature review (conducted in Chapter 2, Theoretical Framework) on the concept of dignity, what factors influence it and how it can be enhanced in a camp in a context of 'undetermined temporariness', the premise of this thesis is that dignity is positively influenced by the degree of self-determination. Self-determination, in turn, is enabled by four main criteria (autonomy, worthiness, self-respect and self-esteem) and further fostered when interactions between actors take place from a position of confidence in an environment with humane conditions and where the rule of law applies. Following from the literature review, it turns out that these criteria and conditions can be met and enhanced in a camp context by fostering spatial self-determination and (informal) economic activity. This leads to the main research question of this graduation project: "How can a modular framework of interventions enhance a sense of spatial self-determination and foster (informal) economic activity in UNHCR planned refugee camps while maintaining a non-permanent character and remaining adaptable to scale changes?". In this context, a modular framework is understood as a framework of principles which are applicable in different cases by following the principles instead of a specific design. Defining 'a non-permanent character', proves to be more laborious. Although the temporary or non-permanent intent of refugee camps is often mentioned in the literature, no clear indications about what timespan is still considered temporal and what is not, are defined. Sources, including UNHCR (2015) and Turner (2016), only state that 'protracted' live times of refugee camps should be avoided where possible. However, they also state that at the same time, it is unknown how long a camp will exist. As stated above, Turner (2016, p. 142) refers to this phenomenon as a state of "undetermined temporariness". Therefore, a non-permanent

character of a modular generic framework is, in this thesis, understood as a solution that can function for any amount of time, but that can also easily be scaled down or even be removed completely.

The main research-question will be answered, by answering eight sub-questions first, using four methods (literature reviewing, interviewing, spatial analysis of best cases and a multiple case study) (see Chapter 3, Methodology). The first sub-question is about defining the concepts used in this graduation project and is:

1) "What factor(s) that influence dignity can be applied in a planned refugee camp in a context of 'undetermined temporariness'?"

The answer to this question is already discussed in the previous paragraphs and will be further elaborated upon in Chapter 2, the Theoretical Framework. In this chapter, a literature review towards the concept of dignity, what defines it and which factors enhance it will be conducted. Besides giving substantive input to the project, it will also provide the reader with more background information to fully understand the research question and further construction of this graduation project.

Secondly, there are four sub-questions to get a better understanding of current practices with regard to the functioning, construction and phasing of UNHCR planned refugee camps and to understand how temporariness is defined in these camps, these are:

2) "What is the most common UNHCR planned refugee camp typology?"
3) "How is temporariness defined in an UNHCR planned refugee camp setting?"
4) "What is the most common method of phasing in UNHCR planned refugee camps?"
5) "Who are the usual stakeholders in UNHCR planned refugee camps?"

These questions will be answered in Chapter 4 on current practices. By using relevant literature, documents and maps, by conducting expert

interviews, to gather practical information and to reflect during the design process, and by illustrating the findings in three case-studies that relate to the Syrian Civil War. The case studies will also function to get a better understanding on the physical properties of refugee camps.

The third step is to find out how (informal) economic activity and spatial self-determination can be enhanced through spatial interventions and activities. This leads to three sub-questions:

6) "How can spatial interventions enhance spatial self-determination?"
7) "How can spatial interventions enhance (informal) economic activity?"
8) "What activities can enhance (informal) economic activity in an UNHCR planned refugee camp context?"

These questions are treated in Chapter 5 and Chapter 6. In Chapter 5, Analyzing Spatial Elements, spatial entities are spatially analyzed to understand why there is a relatively high level of (informal) economic activity and/or spatial self-determination in the analyzed cases. In Chapter 6, Design Exploration, the proposed (design) interventions are discussed, choices are explained and the interventions are tested in a case (Qushtapa refugee camp in Iraq). By answering these eight sub-questions, enough input is generated to create a realistic set of spatial and activity related intervention proposals based on a range of principles that enhance (informal) economic activity and spatial self-determination in the context of an UNHCR planned refugee camp, thereby answering the main research question. However, to assess how realistic the proposed interventions actually are, three more sub-questions have to be answered:

9) "Are the proposed interventions realistic with regard to the materials that are needed to implement them and why?"
10) "Are the proposed interventions realistic with regard to the labor force that is needed to implement them and why?"
11) "How do the proposed interventions fit in the existing UNHCR-Mandate and UNHCR

standards?"

These questions are discussed in Chapter 7, the Assessment.

Parallel to the process of answering the first eight questions, work is conducted on the spatial and activity related intervention proposals and on the illustratory case specific strategy and design. The combination of the analysis and the design process forms the iterative 'analysis-design interaction process' (see Chapter 3, the Methodology, for more information).

1.3 Relevance

As discussed in the previous section, the number of displaced people and therefore refugee is rising at unprecedented speeds. Besides, this trend is likely to continue in the upcoming years. This and the fact that in many refugee camps, especially in protracted situations, there is a lack of dignity, makes that this graduation project touches upon a pressing and relevant societal topic.

Besides having societal relevance, it also became clear that, up to now, little research has been conducted towards a spatial approach of improving dignity through self-determination. This is also acknowledged by Couldrey & Herson (2017). Therefore, this graduation project also has an academical relevance.

Last, from a professional point of view, UNHCR planned refugee camps form a very interesting case since the UNHCR Emergency Handbook, on which general camp lay-out and management is based, only contains planning and managerial guidelines and lack a more spatial perspective. This fact makes that forming a spatial framework for UNHCR planned refugee camps forms a relatively unexplored terrain in the field of Urbanism.

1.4 Readers Guide

Following on this introduction, first the concept of dignity and factors that generally influence it and how these can be applied in a temporary camp context will be discussed. In the third chapter, the Methodology, the outline of this graduation project and the methods that are used will be discussed. To do this, the outcomes of the literature review, conducted in the Theoretical Framework (Chapter 2), will be used as starting point. These outcomes are also integrated in the methodology and methodological framework via the conceptual framework. In the final section of Chapter 3, several limitations and advantages of the used methods will be discussed, however, for a more elaborate reflection on the used methods, see Chapter 9, Reflection and Discussion. In Chapter 4, Current Practices, the current functioning, construction and phasing of UNHCR planned refugee camps will be elaborated upon. Next to this, it will be discussed how temporariness is defined in these camps. To illustrate the findings and to get a better understanding of the physical properties of these camps, three case-studies (Azrak, Yordan; Qushtapa, Iraq; Domiz I, Iraq) will be analyzed and discussed. Later, Qushtapa Refugee Camp will also serve as test case. In Chapter 5, cases of four different types of spaces, namely squares, courtyards and streets, communal gardens and covered markets or bazaars will be spatially analyzed to understand what spatial elements enhance (informal) economic activity and/or spatial self-determination. In Chapter 6, a set of spatial and activity related intervention proposals based on a range of principles that enhance (informal) economic activity and spatial self-determination in the context of an UNHCR planned refugee camp are presented and discussed. These proposals are tested and illustrated in several designs that are implemented in Qushtapa Refugee Camp (Iraq). The next chapter, Chapter 7, the Assessment, will assess the outcomes of this project with regard to how realistic the proposed interventions are. In Chapter 8, the Conclusion, all findings will be briefly recapitulated. In the final chapter, Chapter 9, the Reflection and Discussion, the process,

methods used and outcomes will be reflected upon.

2

THEORETICAL FRAMEWORK

THEORETICAL FRAMEWORK

Based on the information provided in the introduction, this chapter starts of with the question "What factor(s) that influence dignity can be applied in a planned refugee camp in a context of 'undetermined temporariness'?". In this question, the emphasis lays on planned camps, since these, per definition, have some form of centralized management or planning that will enable one to implement interventions. To answer this question, it is first of all important to get a better understanding of the concept of dignity and what factors define it. This will be done by conducting a literature review towards the concept of dignity. Secondly, criteria and conditions, that influence dignity and that are applicable in the context of managed camps will be highlighted and discussed. Thirdly, an elaboration will be made on how these criteria and conditions can be met in a refugee camp in a context of 'undetermined temporariness'. Last, all outcomes will be recapitulated in the conclusion.

2.1 The Concept of Dignity

The concept of dignity is used in a wide variety of fields and contexts, from a judicial and human rights perspective (McCrudden, 2008) to dignity in organizations (Pirson & Kostera, 2017). However, also throughout time, the concept of dignity and how it is understood went through many changes (McCrudden, 2008; Sensen, 2011). According to McCrudden (2008), the concept was used for the first time by the Romans who referred to it by using the word *dignitas hominis*. In this context dignity was understood as having an appropriate degree of honor and respect reflecting a person's status, usually based on the rank or position of that person (McCrudden, 2008). This notion was not exclusively for people, it was also used for institutions and the state (McCrudden, 2008). Sensen (2011, p. 75) calls this the "aristocratic" use of the concept, it only applied to certain people or institutions that were worthy of it. This perception of dignity is partly used in legislation of the modern western world, a famous example being the Bill of Rights (1689) (McCrudden, 2008). But also parts of current legislation, regarding, for instance, respect towards foreign diplomats, is still build on this notion (McCrudden, 2008). The Roman philosopher Cicero had a different view on dignity based on the idea that humans in general

are not animals because their being is based on study and reflection (McCrudden, 2008). This way of seeing dignity means that it applies to all humans instead of only a few (McCrudden, 2008). However, to live up to our (human) superiority over animals, one also has the duty to live a life of reason and to resist sensual temptations (McCrudden, 2008; Sensen, 2011). Sensen (2011, p. 76) refers to this notion as a clear example of the "traditional conception of dignity" which formed the bases of how the concept was mainly used till the 20th century. This perception of dignity brings up several questions of which the most important are: "What kind of beings are we?" and "How do we appropriately express the kind of beings we are?" (McCrudden, 2008, p. 657).

According to McCrudden (2008), there are historically three different approaches to treat these questions. First of all, one can approach these questions from a religious perspective (McCrudden, 2008). Secondly, they can be approached using philosophical rigor to understand and solve them (McCrudden, 2008). Third and last, these questions can be approached by looking to dignity related failures of the past (McCrudden, 2008). The religious perspective links these questions to the supranatural, in other words, the notion that "Man is made in

the image of God" which differentiates them from other creatures (McCrudden, 2008, p. 658). Pico della Mirandola, in his book 'On the Dignity of Man' (1486), continued in this train of thought by defining dignity as the ability, given to man by God, to let a man decide for himself who he wants to be (McCrudden, 2008). This notion of self-determination as form of dignity connects to the second method of approach towards dignity, what McCrudden (2008) calls the philosophical perspective. This perspective became especially popular during the period of the Enlightenment where the idea of someone being his/her own master of his/her fate became central (McCrudden, 2008). It meant a departure from seeing humans as means to an end towards people being an end (McCrudden, 2008). This idea is best illustrated by, what is widely believed to be, Immanuel Kant's (1785) understanding of dignity, namely: "to treat people with dignity is to treat them as autonomous individuals able to choose their destiny." (McCrudden, 2008, p. 660). Throughout time, this concept became increasingly politicized, for example during the French Revolution in 1789, where besides *Egalité* and *Fraternité*, the idea of *Liberté* for all was central (McCrudden, 2008). This use of the concept of dignity continued throughout the 19th century (McCrudden, 2008). It was also in this period that Friedrich Schiller associated dignity for the first time with social conditions of people in his work *Würde des Menschen* (1798), by stating that dignity will follow automatically when one provides basic needs to people (McCrudden, 2008). In this context dignity was also used as reason to promote the improvement of working conditions for working class using the term "dignity of labour" (McCrudden, 2008, p. 661). These outcries for dignity also arouse several counter reactions. Schopenhauer, for example, wrote in his reaction to Kant's theory (1837) that the notion of dignity was vague and without any content, leading to empty phrases of proponents (McCrudden, 2008). Marx (1847) critiqued the concept from a different perspective. He posed that an outcry for more dignity for the working class by other socialists would not be feasible and it would form a "refuge from history in morality"

(Gilabert, 2017; McCrudden, 2008, p. 661). Nietzsche (1872) again had a different view on dignity and stated that promoting equality by using the concept or dignity was sentimental and "a large slave population is the necessary condition for the existence of the good life." (Sparling, 2012, p. 88). Despite these critiques and as a reaction to socialist tendencies in Europe, the Catholic Church began its own discourse on dignity during the final years of the 19th and the first half of the 20th century, to create an alternative way (McCrudden, 2008). Rooted in this tradition, Jacques Maritain (1882-1973) developed a philosophy where dignity was used as central concept and which he also made central in his view on political life and foreign affairs (McCrudden, 2008). Given his position, not only as academic but also as practitioner, it was possible for him to effectively promote his views. This resulted in the fact that the dignity discourse was, during the first years of the post-war period, for the first time officially included in the practices of international politics (McCrudden, 2008). One of his main achievements in this perspective is that he managed to include the concept of dignity as common good in the structure of the United Nations (UN) (McCrudden, 2008). In the following years, this understanding was adopted to Feminist and the Civil Rights movements (McCrudden, 2008). This conception of dignity as common good that applies to everyone no matter what the circumstances are, is what Sensen (2011, p. 72) calls the "contemporary paradigm of dignity", in other words, the way in which it is currently mostly used. In these years following the Second World War, the third approach, or in the words of McCrudden (2008) the historical perspective, towards dignity was shaped. This perspective presented the implementation of dignity as common good for all as a reaction against historical events on which a wide consensus existed that these seriously violated dignity, foremost the Nazi ideology which led to the horrors of the Holocaust (McCrudden, 2008).

Currently, there is still discussion on how dignity itself should be defined. Seifert, for example, has an intuitionist approach towards dignity,

meaning that he poses that dignity cannot be defined but that someone intuitively knows whether dignity is present or not (Sensen, 2011). However, what is widely believed to be Kant's (1785) conception of dignity, namely: "to treat people with dignity is to treat them as autonomous individuals able to choose their destiny.", is the understanding of dignity this graduation project will use (McCrudden, 2008, p. 660). This conception of dignity will be used for two reasons. First, it is the most widely used conception of the concept, making that by using the same understanding, this project will better fit in the existing dignity discourse, especially the discourse that applies the concept in 'real-life' cases. Secondly, it provides a clear method to increase the degree of dignity in a certain situation, since, treating someone in way that (s)he can choose his/her own destiny, means one has to provide him/her with the means to this, in other words, provide room for self-determination. This would then also mean that when the degree of self-determination increases, the sense of dignity will also increase. These notions are essential if one wants to make a difference in a 'real-life' situation.

Regarding the application of dignity, Jacobsen, Oliver, and Koch (2009, p. 726) divide dignity in two types: 'human dignity' and 'social dignity'. Human dignity is described as a universal value for everyone (Jacobsen, Oliver, and Koch, 2009). In this context, dignity is, for instance, understood as the underlaying value for human rights related laws and discourse. A famous example hereof is the Universal Declaration of Human Rights, which the UN adopted in 1948. Already in the introduction, dignity is mentioned (twice) and already in the very first sentence (McCrudden, 2008). This first sentence where it is mentioned gives a perfect example of Jacobsen, Oliver, and Koch's (2009) conception of human dignity: "Whereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world" (Universal Declaration of Human Rights, 1948, p. 1). Social dignity, on the other hand is described as dignity that is generated through social relations (Jacobsen,

Oliver, and Koch, 2009). This means that social dignity is influenced by the social context of a person, which in turn, can be influenced by its physical context (Jacobsen, Oliver, and Koch. 2009). Therefore, this graduation project will use the concept of social dignity, using Kant's understanding of dignity itself.

2.2 Factors Influencing Dignity

As discussed in the previous section, the premise of this project, based on Kant's understanding, is that dignity is influenced by the degree of self-determination. In this section, this notion will be further developed and elaborated upon by providing criteria and conditions that enable and support self-determination and therefore dignity. In order to find concrete input of criteria or conditions that can be applied in a physical context, it is important to look for (fields of) research where a certain degree of dignity is measured. This assumption is based on the reasoning that if one aims to measure a degree or level of dignity, measurable indicators or criteria are needed that thus have a concrete effect in reality. In most fields, the concept of dignity, even social dignity, seems to be presented or applied more as a code of conduct than as a measurable variable. However, in the field of medical research, there is a variety of published papers about the link between dignity and both physical and psychological health of people in different contexts. The populations where this link is investigated ranges between Palestinian Refugees (Khatib & Armenian, 2010), city populations (Jacobsen, Oliver, and Koch. 2009) and patients in hospitals or palliative care facilities (Chochinov et al., 2002; Haddock, 1996; Mairis, 1994). In the following paragraphs, their notions of (social) dignity and factors that influence it will be discussed. This concise review will lead to four criteria (autonomy, worthiness, self-respect and self-esteem) and several conditions that enable and foster self-determination and therefore dignity. These will be recapitulated in the final paragraphs of this section.

In their research towards the link between dignity of different populations in cities and

their physical and psychological health, Jacobsen, Oliver, and Koch (2009) subdivide the concept of social dignity in 'dignity-of-self' and 'dignity-in-relation' (Jacobsen, Oliver, and Koch, 2009, p. 726). 'Dignity-of-self' is about individual characteristics, such as having a certain degree of self-worth and self-respect which are indicated by having confidence and integrity (Jacobsen, Oliver, and Koch, 2009). 'Dignity-in-relation', on the other hand, is about how these characteristics are "conveyed and mirrored" and confirmed through interaction with other people (Jacobsen, Oliver, and Koch, 2009, p. 726). However, these two types seem to go hand in hand since the 'dignity-of-self' is, obviously, also influenced by interaction and external factors. This then, results in a 'chicken or egg' problem. What was there first? 'Dignity-of-self' resulting in a more 'dignity promoting' stand during interactions or 'dignity-in-relation' since a 'dignity promoting' interaction fosters someone's self-respect and therefore someone's dignity. To overcome this problem, we will focus on external factors and conditions that influence both individual characteristics and interaction patterns that foster dignity, without further differentiating between these types.

According to Jacobsen, Oliver, and Koch (2009), social dignity can be externally influenced by interaction between people through word and deed. Four factors are mentioned by Jacobsen, Oliver, and Koch (2009), that are important in the setting of these interactions. The first factor is about the (different) positions of people in relation to each other. Jacobsen, Oliver, and Koch (2009), mention that asymmetric relations between people result in a higher likability of dignity violations. They state about this: "Dignity violation is tied to an order of inequality" (Jacobsen, Oliver, and Koch, 2009, p. 726). This effect is exacerbated when, on the one hand, a person or group of people is in a vulnerable position while, on the other hand, the other actor is antipathic (Jacobsen, Oliver, and Koch, 2009). However, when solidarity is the defining threat of a relation between different actors, overall dignity is promoted (Jacobsen, Oliver, and Koch, 2009). This also applies to situations where an actor is in a "position

of confidence and the other in a position of compassion" (Jacobsen, Oliver, and Koch, 2009, p. 726). Last, dignity may increase when the rule of law applies and when "settings are those that feature humane circumstances" (Jacobsen, Oliver, and Koch, 2009, p. 726).

In their research on the link between dignity and both the physical and psychological health of Palestinian refugees, Khatib & Armenian (2010) further expand and concretize the notion of social dignity by adding four criteria which they use to measure the degree of dignity in 'their' population. The criteria they mention, which enable dignity to exist, are autonomy, worthiness, self-respect and self-esteem (Khatib and Armenian, 2010, p. 39). The first criterion that Khatib & Armenian (2010) mention is autonomy. Autonomy is essentially about independence from others (Khatib & Armenian, 2010). This independence concerns mostly the capacity to take one's own decisions, physically function without depending on others and having some sort of control over the situation (Chochinov et al., 2002; Khatib & Armenian, 2010). Worthiness is the second criterion that Khatib & Armenian (2010) mention. Worthiness is about the ability to feel important and appreciated by others, based on one's own capacity (Haddock, 1996; Khatib & Armenian, 2010). The third criterion is self-respect (Khatib & Armenian, 2010). This criterion is about being respected by oneself and by others based on the knowledge that you are trustworthy, responsible and reliable (Khatib & Armenian, 2010; Mairis, 1994). The fourth and last criterion that Khatib & Armenian (2010) mention is self-esteem. Although this criterion bears some similarities with the criterion of self-respect, the focus is on other personal characteristics, which are: maintaining a fighter spirit, having a sense of pride and hopefulness, maintaining one's self-image and essential characteristics, for example by maintaining one's accustomed role in a community and have a sense of acceptance of the situation (Chochinov et al., 2002; Khatib & Armenian, 2010; Mairis, 1994).

2.3 Application in Refugee Camps
The next and last step is to find a way of how these criteria and conditions can be applied in a temporary camp context, so that they enable self-determination and therefore the dignity of the camp inhabitants. To do this, literature about human needs, the nature of refugee/IDP camps and people's behavior in refugee/IDP camps will be used.

When relating criteria such as worthiness and self-esteem to literature about human needs, it becomes clear that these criteria are usually not mentioned as first needs for humans to survive, let alone have a sense of dignity. Taking the work of Posten (2009, p. 348) into account about Maslow's famous hierarchy pyramid, "esteem needs" (about "prestige and feelings of accomplishment"), under which most criteria can be classified, is the fourth (out of five) level(s) (see figure 4). The three levels that need to be met first, are: "physiological needs" (about food, water, warmth and rest), "safety needs" (about physical safety) and "belongingness and love needs" (about friends and intimate relationships) (Ingram, 1989; Posten, 2009, p. 348). Although there are different critiques on this model, for instance that it is based on a western individualist perspective, that lacks a spiritual aspect of human needs and that its hierarchical setup does not function in the way it is presented, most authors agree on the fact that at least the physical needs (food, shelter and safety) have to be met before attention is given to other aspects of live

Figure 2.1, Maslow's Pyramid of Hyarchies From *Maslow's Hierarchy of Needs*, Posten, 2009, p. 348

(Bouzenita & Boulanouar, 2016). Besides purely enabling a form of dignity, taking these needs into account also meets the criterion, mentioned by Jacobsen, Oliver and Koch (2009, p. 726), about creating a situation where the rule of law applies (to ensure safety) and where settings "feature humane circumstances".

Also from empirical (academic) sources, reporting camp situations, it becomes clear that after these first needs are met, the need for normalcy and dignity grows (Oka, 2014). In his paper about the situation in Kakuma refugee camp in Kenya, Oka (2014) recalls a situation where news hit the camp that about a hundred asylum applications for the United States (US) were declined (Oka, 2014). Following on this event, he noticed how, in the subsequent days, people handled their disappointment and lack of perspective by buying all kinds of 'non-relief' luxury goods (e.g. soft drinks, sugared tea and flavored yoghurt), further boosting the already existing informal economy (Oka, 2014). After interviewing a number of inhabitants, Oka (2014) concluded that the described event only illustrated an always present phenomenon, namely that these forms of (informal) economy help people to maintain a sense of normalcy and dignity in a camp context. This does not come as a surprise since, (informal) economic activity, as just mentioned, not only lets people regain a sense of normalcy, it may also play a role in maintaining a more equal position towards other actors besides raising confidence, because (in theory) consumer and producer need each other to the same extend to maintain themselves. Next to this, it helps to meet the criteria of, at least, autonomy (since having economic means and being able to use them creates a form of independence), worthiness (since having a negotiation position in economic interactions fosters a feeling that one is deemed important and appreciated by others based on one's economic capacity) and self-esteem (since it helps maintaining a sense of pride and of one's accustomed role in a community (a sense of normalcy)).
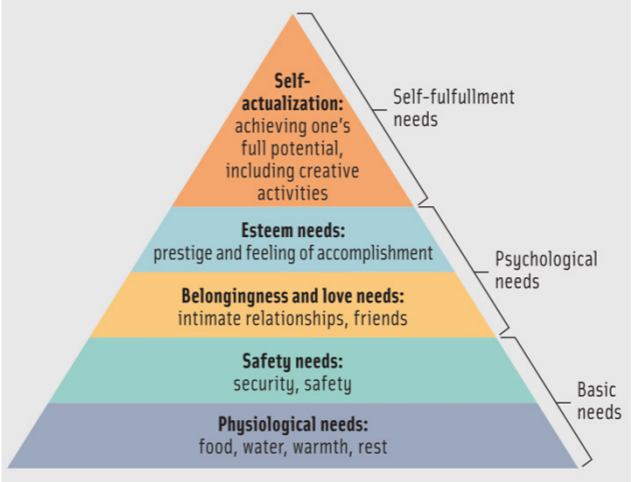
From a spatial perspective, Woroniecka-Krzyzanowska (2017) states, based on her research on al-Am'ari (a Palestinian refugee camp), that especially in situations where refugees reside in camps for protracted periods of time there is a growing need for spatial self-determination. This is part of what she calls "[t]he concept of the right to the camp" (Woroniecka-Krzyzanowska, 2017, p. 168). As examples of spatial self-determination, she describes how in al Am'ari, camp, inhabitants gave streets and ally's names they choose themselves which already gave some sort of social recognition (Woroniecka-Krzyzanowska, 2017). Furthermore Woroniecka-Krzyzanowska (2017, p. 167) describes how a "community-building project has been a source of self-esteem and comfort against the experience of social estrangement". By calling the concept 'spatial self-determination' and providing these examples, Woroniecka-Krzyzanowska (2017) shows how this concept not only in itself fosters dignity, but also how it supports at least the criterium of self-esteem and worthiness (since giving people a form of spatial self-determination is also about giving people responsibility which can also be perceived as a form of trust and appreciation by others).

These applications are all forms of self-determination since people are placed in a position (in an economic or spatial context) where they can decide for themselves where they spend their money on or how their direct physical surroundings will look like. Therefore, this chapter ends with the repeated notion that Kant's understanding of dignity, namely that it is influenced by the degree of self-determination, still is the overarching theme that needs to be addressed when trying to raise dignity in camps. The criteria and interactive and external conditions enable one to do so.

2.4 Discussion

For the review conducted in this chapter, a western perspective of dignity was used. Although this might exclude other notions that could have been valuable for this review, this was done for a combination of two reasons.

First of all, including even more views would make a review in this setting unfeasible. Secondly, the western perspective that is used in this graduation project is also the most used perspective which increased the number of useful sources to support the review and let it better connect to other theories (McCrudden, 2008). Regarding the final outcomes, the mentioned conditions, criteria and 'methods of implementation' are generic and obviously do not apply to every situation or population. Next to this, the 'supportive applications' that may help to foster self-determination and therefore dignity in the context of camps remain relatively vague when one requires concrete interventions to implement.

2.5 Conclusion

This chapter started with the research question: "What factor(s) influence dignity and how can these be applied in a planned refugee/IDP camp in a context of 'undetermined temporariness'?". To answer this question a literature review towards the definition of dignity, factors that influence it and how these factors can be applied in refugee/IDP camps in a context of 'undetermined temporariness' was conducted. In this paper, Kant's understanding of dignity is used, namely: "to treat people with dignity is to treat them as autonomous individuals able to choose their destiny." (McCrudden, 2008, p. 660). This brings us to the first main finding of this review, namely that the overarching theme which influences dignity is the degree of self-determination. However, to reach a state of self-determination and therefore dignity, four criteria need to be met: autonomy, worthiness, self-respect and self-esteem. Besides these criteria, it is important that interactions between actors take place from a position of confidence in an environment with humane conditions, where the rule of law applies. To meet these criteria and conditions in a planned refugee/IDP camp and in the context of 'undetermined temporariness', basic physical needs have to be met first after which (informal) economic activity and a sense spatial self-determination should be fostered. Although, it is up to the designer to find ways to transform these applications into spatial

interventions, further research towards this topic could be of help. Besides, when implementing spatial or governance related proposals, a constant 'feedback-loop' would be needed to check whether the proposals function in the desired way. Therefore, further research could be conducted towards how to measure the mentioned criteria and conditions.

3

METHODOLOGY

This graduation project is about improving dignity of inhabitants in UNHCR (United Nations High Commissioner for Refugees) planned refugee camps. In this chapter, about the methodology of this thesis, the process of reaching this aim will be discussed. To do this, first the problem statement and aim of the thesis will be recapitulated. Secondly, a brief overview of the relevant concepts and how they relate to each other and the goal of the thesis will be sketched. Hereafter, the main research question will be presented and elaborated upon. Fourth, the sub-questions that need to be answered to answer the main research question will be presented and explained. Fifth, the different methods that will be used in this thesis to treat all sub questions and therefore answer the main research question and how they relate to each other throughout the process will be discussed. Last, all methods will be recapitulated and commented upon regarding their advantages and limitations in the context of this thesis.

3.1 Introduction and Research Question

As discussed in the Introduction, there are currently about 79.5 million people forcibly displaced, of which around 4.6 million people stay in planned or managed camps (UNHCR, 2019). These numbers are still on the rise (UNHCR, 2019). In most of these refugee camps, there is a state of "undetermined temporariness" (Turner, 2016, p. 142) since they are designed as temporary structure, but, on average, function for 17 years (De Rooi, Wascher, and Paulissen, 2016; Sabie et al., 2017; Turner, 2016).

Although, this disparity is not necessarily a problem on its own, the exclusive and constant focus on short term problem solving for prolonged periods of time without granting inhabitants agency of any kind (Dynes (1994, p. 142) refers to this as a "military model" of crisis management), results therein that other needs of people including the need for dignity and normalcy are not met (Oka, 2014). Oka (2014, p. 32) states about this that "[a]s temporary solutions to disaster, the policies are intended to ensure refugees' survival, not to prompt discussion of normalcy and dignity". This again leads to dissatisfaction, which may in turn lead to more controlling measures. In the conceptual framework (see Figure 3.1) this vicious circle, feeded by an exclusive focus on efficiency and

order is called the 'military model'. Besides this, it is important to take into account that dignity not only influences quality of life and general livability but also both physical and psychological health (Jacobsen, Oliver, and Koch, 2008; Khatib & Armenian, 2010). Therefore, the neglect of dignity in camps and the lack of it forms a major problem. This leads to the aim of this thesis, namely, to improve the dignity of camp inhabitants in UNHCR planned refugee camps. However, considering the constant state of 'undetermined temporariness' in camps, which reflects the strict mandate of the UNHCR limiting their work to life-saving, healthcare and education only (UNHCR, 2003), it is necessary to propose interventions that foster dignity but respect the temporary character of camps (UNHCR, 2015; De Rooi, Wascher, and Paulissen, 2016). Next to this, as will be explained below, the Syrian Civil War will be used as umbrella case from which three cases are selected, thereby limiting the scope of this graduation project regarding the applicability of its outcomes. In Chapter 9, Discussion and Reflection, possible further elaboration of the outcomes will be discussed in more detail. The outcomes of this graduation project will consist of a framework of activity-related and spatial design principles, on enhancing (informal) economic activity and/or spatial

self-determination, that are illustrated and tested by implementing them in a vision and several designs which are implemented in a test case (Qushtapa Refugee Camp, Iraq). Following from the literature review (conducted in Chapter 2, the Theoretical Framework) on the concept of dignity, what factors influence it and how it can be fostered in a camp in a context of 'undetermined temporariness', the premise of this thesis is that dignity is positively influenced by the degree of self-determination. Self-determination, in turn, is enabled by four main criteria (autonomy, worthiness, self-respect and self-esteem) and further fostered when interactions between actors take place from a position of confidence in an environment with humane conditions and where the rule of law applies. Following from the literature review, it turns out that these criteria and conditions can be met and enhanced in a camp context by fostering spatial self-determination and (informal) economic activity. These outcomes are recapitulated in the conceptual and methodological framework (see Figures 3.1 and 3.4).

This all leads to the main research question of this thesis, which is: "How can a modular framework of interventions enhance a sense of spatial self-determination and foster (informal) economic activity in UNHCR planned refugee camps while maintaining a non-permanent character and remaining adaptable to scale changes?". In this context, a modular framework is understood as a framework which is applicable in multiple cases by following principles instead of a specific design. Defining 'a non-permanent character', proves to be more laborious. Although the temporary or non-permanent intent of refugee camps is often mentioned in the literature, no clear indications about what timespan is still considered temporal and what is not, is not defined. Sources, including UNHCR (2015) and Turner (2016), only state that 'protracted' live times of refugee camps should be avoided where possible. However, they also state that at the same time, it is unknown how long a camp will exist. As stated above, Turner (2016, p. 142) refers to this phenomenon as a state of "undetermined temporariness". Therefore, a non-permanent character of a modular framework is, in this
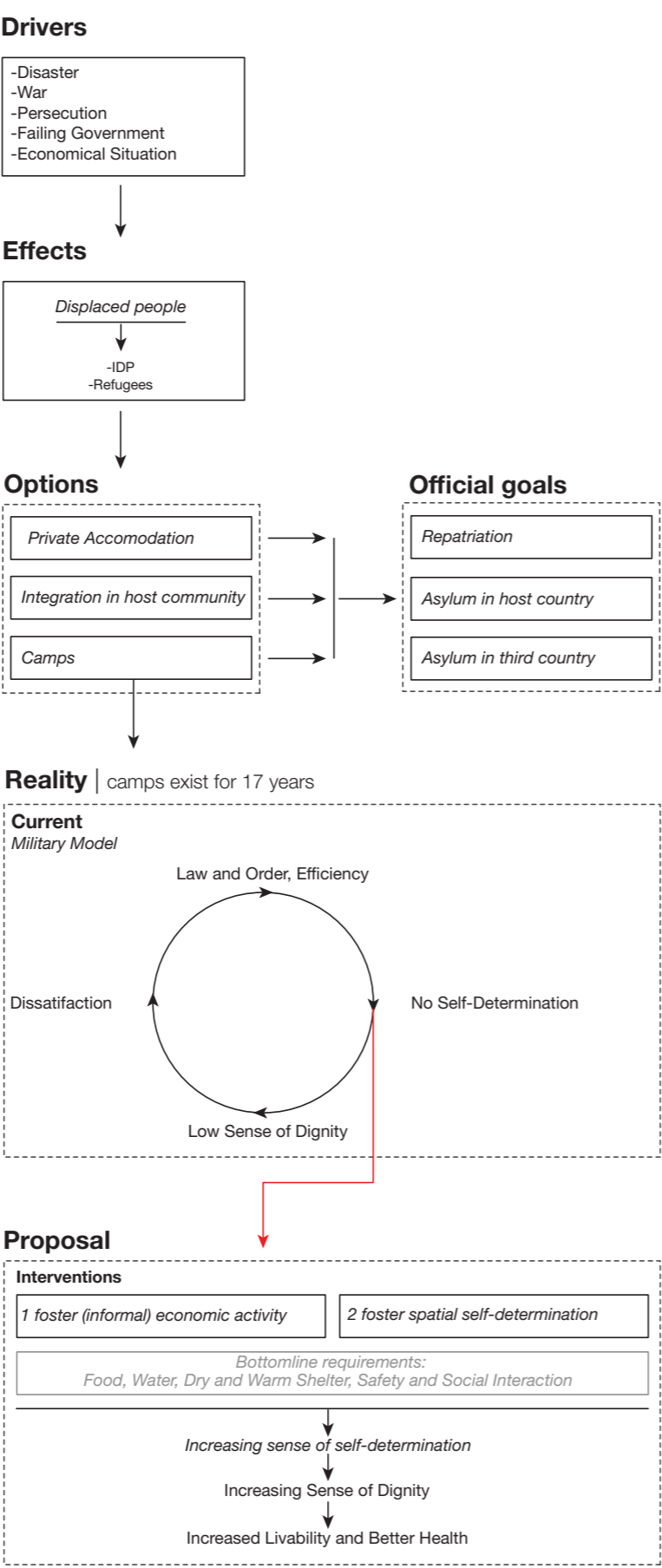

Figure 3.1, conceptual framework

graduation project, understood as a solution that can function for any amount of time, but that can also easily be scaled down or even be removed completely.

To answer the main research question, eight sub-questions have to be answered first (see Figure 3.2). After which three more sub-questions structure the assessment. These questions are classified under different themes, reflecting different phases in the 'analysis-design process' (see Figure 3.2). The first theme is called 'Defining Concepts'. This is about creating further background information and input for the design regarding the key-concept of self-determination. The second theme is called 'Background Analysis' and is about creating more pragmatic and case specific information. The third theme, 'How to Apply', is about how to apply the outcomes of the literature review in practice. The fourth and last theme is called 'Assessment'. This category is about assessing the (preliminary) outcomes of the synthesis between theory and practice, by determining whether the solution for the main problem is realistic.

After treating these sub-questions, the main research question will be answered through spatial and activity-related principles and a vision and three designs in an illustrating case.

3.2 Methods
To answer the sub-questions, a combination of methods will be used, including literature reviews, interviews, a multiple case study and best case studies (see Figure 3.4). These methods can be divided in 'conceptual' and 'applied' methods. The 'conceptual' methods are considered to form the explorative part of the research in the sense that they explore what aspects are deemed important by scholars and experts that are active in this field. These aspects will then be used as input for further analysis and the final design proposal. The 'applied' methods apply theoretical assumptions to real cases. Regarding this division the literature review is considered as a 'conceptual' method, while the multiple case study is considered an 'applied' method, since it applies certain concepts to analyze a specific case or location. Interviewing and the best case studies as a method fall under both categories. Regarding the best case studies

DEFINING CONCEPTS
1) What factor(s) that influence dignity can be applied in a planned refugee camp in a context of 'undetermined temporariness'?

BACKGROUND ANALYSIS
2) What is the most common UNHCR managed refugee camp typology?
3) How is temporariness defined in an UNHCR planned refugee camp setting?
4) What is the most common UNHCR planned refugee camp phasing?
5) Who are the usual stakeholders in UNHCR planned refugee camps?

HOW TO APPLY
6) How can spatial interventions enhance a sense of spatial self-determination?
7) How can spatial interventions enhance (informal) economic activity?
8) What activities can enhance (informal) economic activity in an UNHCR planned refugee camp context?

ASSESSMENT
9) Are the proposed interventions realistic with regard to the materials that are needed to implement them and why?
10) Are the proposed interventions realistic with regard to the labor force that is needed to implement them and why?
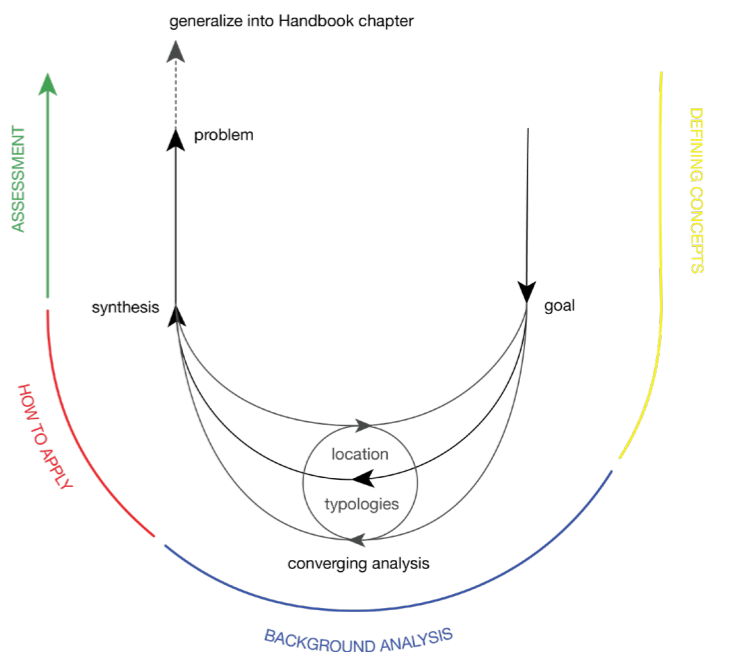11) How do the proposed interventions fit in the existing UNHCR-Mandate and standards?

Figure 3.2, 'analysis-design process' and subsequent sub-questions

this is the case since successful cases of spatial interventions fostering spatial self-determination and/or (informal) economic activity will be (spatially) analyzed after which the outcomes will be conceptualized to enable application in the design principles and test design. Interviewing as a method falls under both categories because it will be used, both, to gain general insight in refugee camp related processes and to get specific, case related, answers. Both the literature studies and the interviews have an exclusively qualitative nature, since their goal is to get to understand certain ideas and themes. The best case studies and multiple case study, however, will entail different themes (see below). Therefore, a part (geographical and spatial related topics) can be defined as spatial research/analysis, since this is primarily about mapping thematic structures or concentrations. The other part (about social and flow related topics), however, can be defined as spatial and quantitative research/analysis, since this includes both mapping and a purely numerical outcome of the research. The combination of both method types ('conceptual' and 'applied' methods) forms a deductive research approach, general theories and classifications are used to generate input for the final design principles and test design which will also form the answer to the main research question.

Depending on the sub question in case, different, sometimes all, methods will be used. The four methods and the sub-questions they intend to answer, are discussed in the following sections.

Literature Review
Regarding all sub questions, except for the assessment questions, a literature review will be conducted. Depending on the topic, different types of sources will be used. Regarding sub-question 1, primarily secondary academic literature will be used to see how dignity is defined and what factors influence it in the context of a planned refugee camp.

With regard to sub-questions 2 to 8, a combination of primary and secondary sources will be used for the literature review. The primary sources will consist of the UNHCR

Handbook for Emergencies (UNHCR, 2020b) and other guidelines and instructions published by the UN or other relevant organizations regarding certain themes of cases. The secondary sources will include both reports and academic literature which describe or commend on existing situations.

Best Case Studies
Based on own experience, literature and/or tips from others, different cases that express a relatively high level of (informal) economic activity and/or spatial self-determination are selected to be spatially analyzed. The outcomes of these analyses, will be generalized, conceptualized and substantiated with findings from the body of literature, thereby answering sub-questions 6 and 7.

Determining whether a case expresses a certain degree of spatial self-determination and/or (informal) economic activity, is done in different ways. Regarding squares, for instance, spatial self-determination can be expressed by the fact that it is used in a variety of ways that reflect the local needs at different moments. These different uses include, for example, that the square is used as a place to sport, host a market, to picknick, to play and to meet. With regard to courtyards and communal gardens, (spatial) self-determination may be more expressed by (semi-)permanent structures or arrangements made by the users of the space, such as residents placing or constructing plants, furniture and pathways. Last, regarding covered markets or bazaars, (informal) economic activity is proven by virtue of their existence, while spatial self-determination may be expressed by a transitional zone between the individually owned shop and the public route that runs past it. All selected cases can be divided under four different types of spaces, namely: squares, courtyards and streets, communal gardens and covered markets or bazaars.

Interviews
In order to answer sub-questions 2 to 5, providing background information, interviews will be conducted parallel to the final phase of the literature review. By conducting the interviews during the final phase of the literature

review, basic insights from the literature can be used to formulate questions while there is still room for insights derived from the interviews to be integrated in the literature review. The interviews are conducted in a guided but exploratory manner. This means that a list of questions and topics based on the four sub-questions is used by the interviewer to ensure that all topics are touched upon during the interview. The structure of the interview, however, is kept as flexible as possible enabling the interviewee in question to elaborate on topics that (s)he finds important. Regarding all questions, two groups will be interviewed.
1) experts that work for, or advice the UNHCR regarding one or more planned refugee camps
2) (voluntary) staff that assist(s)/(ed) in building and/or managing an UNHCR managed refugee camp

By interviewing these groups, both managerial and practical, and official and unofficial information can be integrated in the thesis.

Multiple Case Study
To answer sub-questions 2 to 5, a multiple case study will be conducted next to the literature review and interviews. By including real life cases, general understanding of refugee camps and of the outcomes of the other research increases and becomes more tangible. Besides this, conducting a multiple case study will generate concrete (spatial and flow related) input for the final design proposal. For feasibility reasons, three UNHCR managed refugee camps that are built in the same context, namely the Syrian Civil War, are selected. To find these different cases, several parameters are defined in order to choose cases with both extreme and average properties. These are (see for different classifications within these parameters Figure 3.3):

1) number of inhabitants
2) age of camp
3) urban of rural context
4) 'fame' of camp (this accounts for the assumption, based on an interview, that in 'famous' camps more voluntary organizations are active than in less well-known camps.)

Number of Inhabitants

< 1000	XS
1001-5000	S
5001-20,000	M
20,001-50,000	L
>50,001	XL

Age of Camp

< 5 years	New
6-10 years	Recent
11-25 years	Average
>26 years	Old

Urban or Rural Context

No Human Developments Surrounding Camp (radius 5 km)	Remote Location
Agricultural context, closest settlement of >1000 inhabitants more than 5 km away	Rural Location
Settlement of >1000 within 5 km radius	Urban Environment

'Fame' of Camp

Wikipedia Page	Well Known
Findable on Google Maps	Easy to Locate
No hits on Wikipedia or Google Maps	Unknown

Figure 3.3, Case study parameters and classifications

These parameters are based on the outcomes of four interviews and a literature review towards the situation in refugee camps. As mentioned above, only UNHCR planned refugee camps are included, because these are relatively well documented. Besides this, only refugee camps are included because regarding refugees, the UNHCR has the same mandate everywhere, offering the same services (UNHCR, 2020). This is not the case with regard to IDP's (UNHCR, 2020) (see for more information on the UNHCR mandate the Introduction). To increase the feasibility of this graduation project, the Syrian conflict is used as main case. This conflict is used as umbrella case, since the refugee crisis following on the Syrian conflict was specifically mentioned by five out of seven interviewees as being novel and interesting in two ways. First of all, this conflict is the first major scale refugee crisis in recent history where

refugees come from urbanized areas and where camps have to be integrated in urbanized societies (countries that surround Syria). This creates an extra challenge since there is an increased craving for urbanization and/or urban structure of camps in protracted situations. Secondly, countries involved in the refugee crisis following on the Syrian conflict have relatively strong and stable governments, increasing the complexity of negotiations between the UNHCR and these parties. According to interviewee 5, this is a novelty since the UNHCR is used to being the main actor managing the crisis it is asked to manage, without experiencing much interference.

The three camps that will be used as case studies relate to this conflict and mainly house Syrian refugees. To choose the cases, the UNHCR's Yearbook of Statistics (UNHCR, 2018) is used to find camps that are located in countries that surround Syria and that differ regarding the four parameters (see Figure 3.3). In this search, camps that are located in the European Union (EU) are not included because the UNHCR is not active in this region. The same applies for refugee camps in Turkey, since these are the main responsibility of the Disaster and Emergency Management Presidency (AFAD), a Turkish governmental crisis management organization. This leaves Israel, Iraq, Jordan and Lebanon. According to the Yearbook of Statistics (UNHCR, 2016), only Iraq and Jordan house UNHCR planned refugee camps. In Lebanon and to a lesser degree Israel, refugees are 'absorbed' into society or have organized themselves informally (UNHCR, 2016). Through this process, Azrak Refugee Camp (Jordan), Domiz I Refugee Camp (Iraq) and Qushtapa Refugee Camp (Iraq) were found. For further information on these cases, see Chapter 4, where these cases will be analyzed and discussed in depth.

The analysis of the cases will mainly focus on spatial and flow related topics. Research towards the spatial aspect will be about mapping, 'camp' morphologies, general lay-out, infrastructure, implementation of UNHCR guidelines, distribution of functions, and borders. Last,

research towards flow related topics include documenting the number of inhabitants and associated water and energy needs (divided in electricity and energy needed for cooking) will be conducted. Besides these influxes of material, also streams that need to be processed should be included, such as: solid waste and sewage streams. To find information on the cases, interviews, satellite imaging and UNHCR sources will be used.

3.3 Design Process and Assessment

Parallel to the analysis process, work will be conducted to the design proposal. Constant interaction between the design and analysis part of the graduation project will result in an iterative process creating input for both parts. The final product of the graduation will consist of a framework of spatial and activity-related design principles, which are implemented in a vision and design in a testcase to test and illustrate them. These outcomes, in turn, will support the effort, towards which further research could be conducted, to create general spatial guidelines that could be added to the UNHCR Emergency Handbook.

These products will be assessed regarding how realistic they are. This will be done by answering three questions (sub-questions 9 to 11) and by presenting the design proposals to three experts from different perspectives (Kilian Kleinschmidt; UNHCR/managerial perspective, Wilko Koning; technical perspective and Hans van der Made; designers perspective) who will review them regarding their applicability. This will finalize the 'analysis-design process'.

3.4 Discussion

Regarding the different methods there are a number of reservations that can be made. With regards to the interviews, only a small number of people will be interviewed and on top of this in an explorative way, making comparison increasingly laborious and resulting in a less representable view of all people in the field. However, to find a large number of people that

are active in this field and to find them willing to talk would form a great obstacle. Besides, the purpose of the interviews is also explorative, in other words to find out how camps function, to get new perspectives that give new input and to discuss general issues and proposals, making a very structured interview method with a high n-number unnecessary. Last, the perspective of (former) inhabitants is missing. However, due to ethical considerations (e.g. danger of persecution) and the relatively limited time span of this thesis, this group is left out. Regarding the case studies, one could pose that including multiple case studies, results in a more superficial analysis than if only one case would be studied thoroughly. However, since the aim of this graduation project is to create a framework of design principles that can be implemented in different cases, it is deemed more important to include more cases and thus possibilities to the analysis than to focus on one case only. Last, a field visit and subsequent field testing would greatly improve the project. However, for obvious reasons (Covid-19) this will, most likely, not be possible during the course of this graduation project.

As with all urbanism projects, this project is about humans. However, in this project people are, for obvious reasons, extra vulnerable. This means that, especially regarding the interviews and case studies where interaction with people will be most tangible, their safety and wellbeing should be considered with great caution.

For a more elaborate reflection on the used methods of this graduation project, please see Chapter 9, Discussion and Reflection.

3.5 Conclusion

The aim of this thesis is to improve the degree of dignity of inhabitants of UNHCR planned refugee camps, thereby improving general livability and the inhabitant's health situation altogether. Following on the literature review, conducted in the Theoretical Framework (see Chapter 2), it becomes clear that dignity is influenced by the level of self-determination.
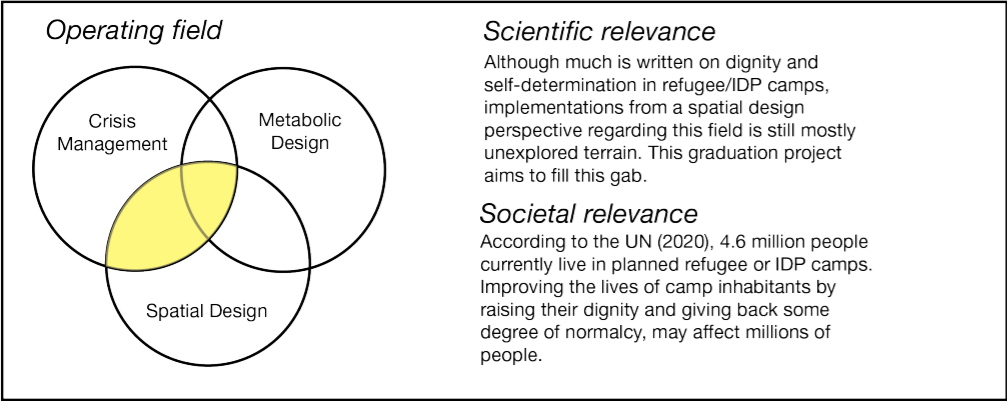
If the level of self-determination of an actor increases, his/her dignity increases as well. Self-determination, in turn, can be enhanced in the temporary context of a refugee camp by spatial self-determination and (informal) economic activity. This leads to the main research question of this thesis: "How can a modular framework of interventions enhance a sense of spatial self-determination and foster (informal) economic activity in camps while maintaining a non-permanent character and remaining adaptable to scale changes?". To answer this question, eight sub-questions that represent three phases or themes ('defining concepts', 'background analysis' and 'how to apply') of the design process are treated first. To do this, four methods of analysis are used parallel to the design process: literature reviewing, interviewing, comparative case studies and best-case studies. Based on a multiple case study of different camps in the context of the Syrian civil war, this will lead to a framework of spatial and design related principles that are applied in one (test-) case (Qushtapa Refugee Camp, Iraq) to test and illustrate them.

These outcomes will be assessed by answering sub-questions 9 to 11 and by presenting them to a 'panel' of three experts representing different 'camp-related' perspectives, thereby finalizing the 'analysis-design process'.
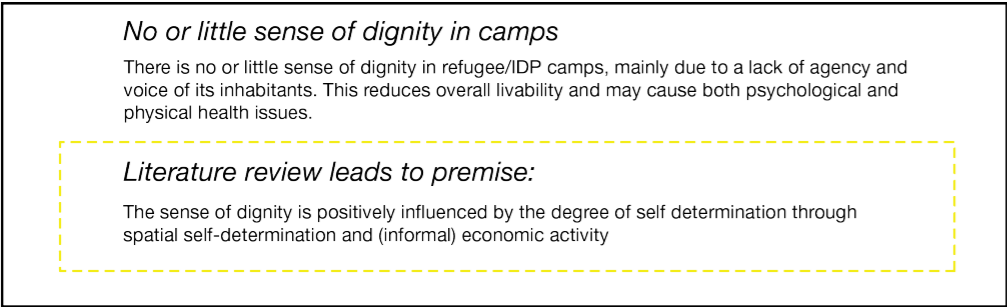
Despite some drawbacks of the methods used, a first contribution can be made in this way to the process of proposing spatial guidelines to the UNHCR Emergency Handbook to improve dignity and thereby livability and health in UNHCR planned refugee camps altogether.
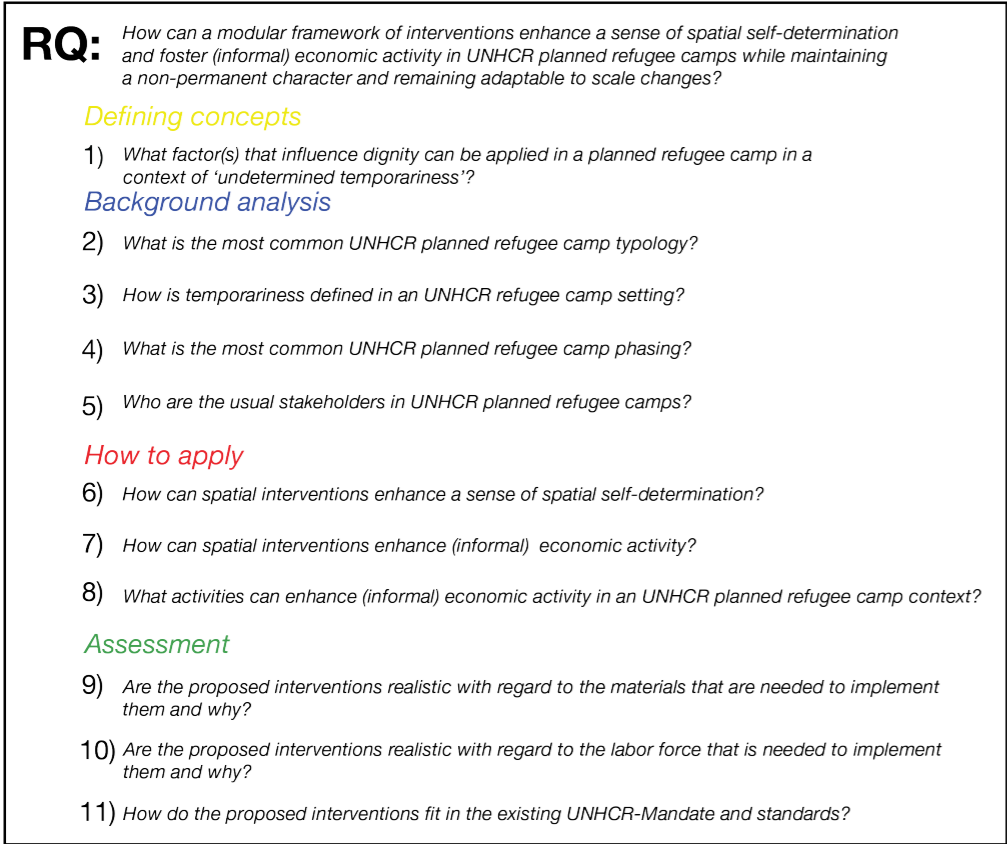
METHODOLOGICAL FRAMEWORK

Initiate

Operating field
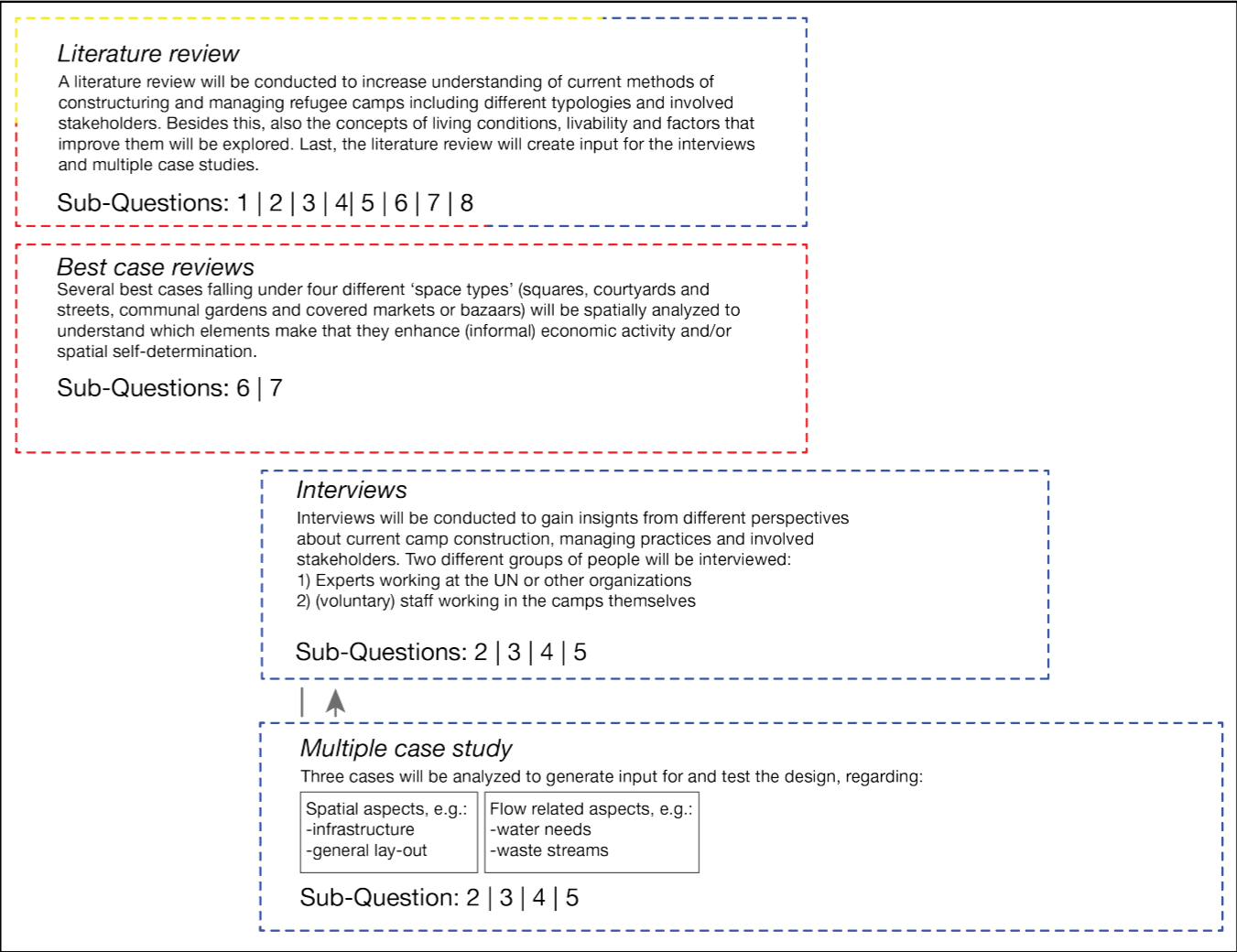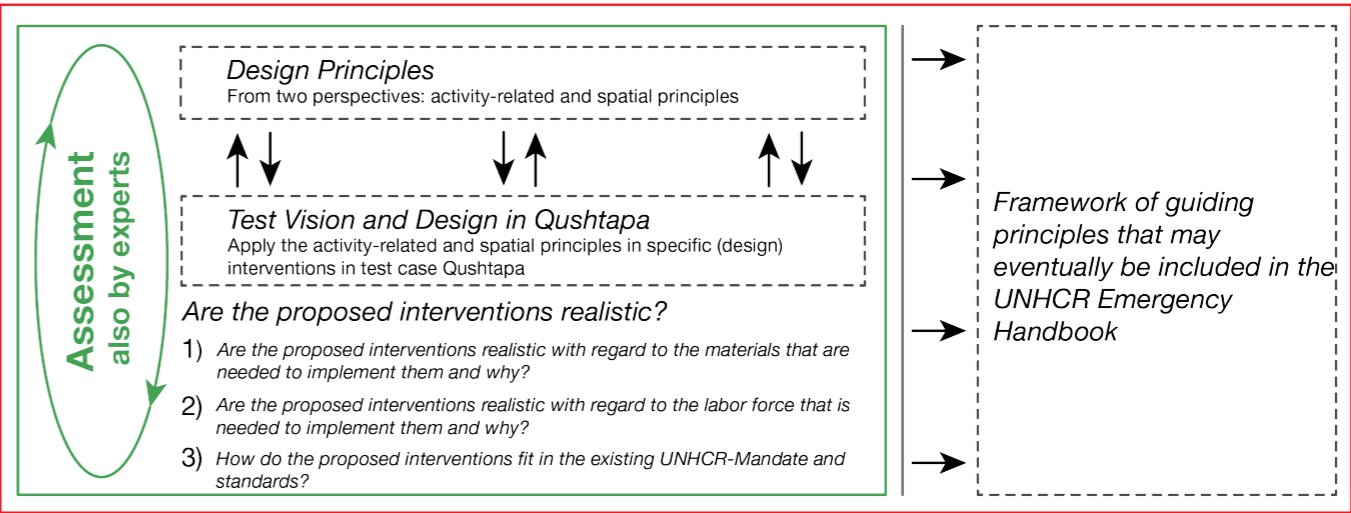
Crisis Management

Metabolic Design

Spatial Design

Scientific relevance
Although much is written on dignity and self-determination in refugee/IDP camps, implementations from a spatial design perspective regarding this field is still mostly unexplored terrain. This graduation project aims to fill this gab.

Societal relevance
According to the UN (2020), 4.6 million people currently live in planned refugee or IDP camps. Improving the lives of camp inhabitants by raising their dignity and giving back some degree of normalcy, may affect millions of people.

Problem statement

No or little sense of dignity in camps
There is no or little sense of dignity in refugee/IDP camps, mainly due to a lack of agency and voice of its inhabitants. This reduces overall livability and may cause both psychological and physical health issues.

Literature review leads to premise:
The sense of dignity is positively influenced by the degree of self determination through spatial self-determination and (informal) economic activity

Research question

RQ: How can a modular framework of interventions enhance a sense of spatial self-determination and foster (informal) economic activity in UNHCR planned refugee camps while maintaining a non-permanent character and remaining adaptable to scale changes?

Defining concepts
1) What factor(s) that influence dignity can be applied in a planned refugee camp in a context of 'undetermined temporariness'?

Background analysis
2) What is the most common UNHCR planned refugee camp typology?

3) How is temporariness defined in an UNHCR refugee camp setting?

4) What is the most common UNHCR planned refugee camp phasing?

5) Who are the usual stakeholders in UNHCR planned refugee camps?

How to apply
6) How can spatial interventions enhance a sense of spatial self-determination?

7) How can spatial interventions enhance (informal) economic activity?

8) What activities can enhance (informal) economic activity in an UNHCR planned refugee camp context?

Assessment
9) Are the proposed interventions realistic with regard to the materials that are needed to implement them and why?

10) Are the proposed interventions realistic with regard to the labor force that is needed to implement them and why?

11) How do the proposed interventions fit in the existing UNHCR-Mandate and standards?

Conceptual

Applied

Analysis

Literature review
A literature review will be conducted to increase understanding of current methods of constructuring and managing refugee camps including different typologies and involved stakeholders. Besides this, also the concepts of living conditions, livability and factors that improve them will be explored. Last, the literature review will create input for the interviews and multiple case studies.

Sub-Questions: 1 | 2 | 3 | 4| 5 | 6 | 7 | 8

Best case reviews
Several best cases falling under four different 'space types' (squares, courtyards and streets, communal gardens and covered markets or bazaars) will be spatially analyzed to understand which elements make that they enhance (informal) economic activity and/or spatial self-determination.

Sub-Questions: 6 | 7

Interviews
Interviews will be conducted to gain insignts from different perspectives about current camp construction, managing practices and involved stakeholders. Two different groups of people will be interviewed:
1) Experts working at the UN or other organizations
2) (voluntary) staff working in the camps themselves

Sub-Questions: 2 | 3 | 4 | 5

Multiple case study
Three cases will be analyzed to generate input for and test the design, regarding:

| Spatial aspects, e.g.: -infrastructure -general lay-out | Flow related aspects, e.g.: -water needs -waste streams |

Sub-Question: 2 | 3 | 4 | 5

Input from analysis

Interaction

Interaction

Input from analysis

Design

Assessment also by experts

Design Principles
From two perspectives: activity-related and spatial principles

Test Vision and Design in Qushtapa
Apply the activity-related and spatial principles in specific (design) interventions in test case Qushtapa

Are the proposed interventions realistic?
1) Are the proposed interventions realistic with regard to the materials that are needed to implement them and why?
2) Are the proposed interventions realistic with regard to the labor force that is needed to implement them and why?
3) How do the proposed interventions fit in the existing UNHCR-Mandate and standards?

Framework of guiding principles that may eventually be included in the UNHCR Emergency Handbook

Time-line

P 2

P 4

Figure 3.4, Methodological Framework

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps

Methodology

4

PART 2 | ANALYSIS

ANALYSIS OF CURRENT PRACTICES, CASE STUDIES
-4.1 current UNHCR planning practices
-4.2 UNHCR phasing and common flow-structures
-4.3 stakeholders in UNHCR planned refugee camps
-4.4 illustration by casestudies

ANALYSIS OF CURRENT PRACTICES
CASE STUDIES

This chapter is divided in five main parts. First, current planning practices of the United Nations High Commissioner for Refugees (UNHCR) regarding the construction of refugee camps will be studied and commented upon. In this section, the temporary character and how this materializes of camps will be discussed as well. In the second part, the UNHCR phasing of the construction of camps, its affiliated help and common flow-structuring by the UNHCR will be elaborated upon. In the third section, usual strakeholders and how they are orginized will be discussed. Last, three case-studies will be presented and briefly discussed to illustrate the findings of the preceding sections.

4.1 Current UNHCR Planning Practices

In this section, first a brief description of the UNHCR as organization will be given. Secondly, the UNHCR Emergency Handbook and its current practices will be discussed. Last, the temporary character of UNHCR planned refugee camps will be discussed.

The UNHCR
Within the United Nations (UN), the UNHCR is the department that is responsible for the protection of refugees, stateless people and returnees (UNHCR, 2020; UNHCR, 2017). The UNHCR was established in 1950 to coordinate an effective response to the high number of European refugees in the aftermath of World War II (UNHCR, 2020). For this work, they received the Nobel Peace Price in 1954 (UNHCR, 2020). In the following decades, the UNHCR continued this work during numerous other crises, including sheltering 200.000 Hungarian refugees in Austria after the Hungarian Revolution in 1956, sheltering refugees in Africa who became displaced due to the many conflicts following decolonization in the 1960's and assisting displaced people in Africa, the Middle East and Asia following natural disasters, conflicts and dictatorships (UNHCR, 2020). In 2019, the UNHCR has a staff of 17324 people and an annual budget of $8.6 billion (UNHCR, 2020).

In the event of a crisis where a large number of people becomes displaced, the UNHCR is able to respond to any crisis anywhere in the world within 72 hours (UNHCR, 2020). This is possible due to an extensive global network of pre-stocked goods, suppliers and partners (UNHCR, 2020). In a situation like this, there are several options to provide shelter to refugees. These options include residing on land or in houses they rent, occupy informally, own or use through private hosting arrangements (UNHCR, 2020b). As last resort, camps are mentioned as option (UNHCR, 2020b). In all cases the government of the country where the people in question are residing is the main responsible party and the UNHCR assists with resources, coordination and know-how after formally being asked to assist (UNHCR, 2020a).

Current Practices and the UNHCR Emergency Handbook

In case a camp has to be constructed to shelter people, for example due to safety issues, local regulations or simply because the influx of displaced people is too high, the UNHCR has provided an extensive Emergency Handbook including several chapters on the planning and managing of camps. These chapters can be downloaded separately and provide checklists and information on practices.

The UNHCR Emergency Handbook is mostly about technical regulations on how to construct a standard camp. These regulation foremost come down to safety regulations and planning rules regarding amenities. These regulations will be discussed and illustrated, using Qushtapa refugee camp in Iraq as example. As will be discussed in more detail below, this camp was established in 2013 to house Syrian refugees and currently houses approximately 7900 people (UNHCR, 2018). Although it is currently managed by the Barzani Charity Foundation (BCF), the camp lay-out was planned by the UNHCR Erbil Technical Unit, using UNHCR standards (see figure 4.1) (UNHCR, 2018).

When reviewing Qushtapa camp, it becomes clear that the guidelines of the UNHCR Emergency Handbook (UNHCR, 2020) are not always exactly stuck to. The camp, for example, does house a small hospital, which has a minimum reference number of 20 000 people, while the camp 'only' houses about 7900 people. This also applies for educational amenities, there are more schools per capita (two UNICEF schools and a school managed by the Red Crescent) than are strictly mandatory according to the Handbook (one per 5000 inhabitants).

Regarding the so-called WASH-amenities (Water, Sanitation and Hygiene), the standards are met in Qushtapa camp. For each four shelter units (approximately 20-30 people), latrines, showers and a waterpoint are available. There is, however, no water-net available, making that all WASH points have to be regularly refilled. Regarding waste related amenities, no judgement

structuring of scales

module	structure	number of people
family	1 family	4-6 persons
community	16 families	80 persons
block	16 communities	1250 persons
sector	4 blocks	5000 persons
settlement	4 sectors	20.000 persons

basic ammenity standards

description	Emergency standard
communal latrine	1 per 20 persons
shower	1 per 50 persons
water tap	1 per 80 persons
rubbish container (100 liter)	1 per 50 persons
refuse pit (2x5x2m)	1 per 500 persons
health centre	1 per 20.000 persons
referral hospital	1 per 200.000 persons
school	1 per 5000 persons
distribution centre	1 per 5000 persons
market place	1 per 20.000 persons
feeding centre	1 per 20.000 persons
storage area (15-20 m²)	per 50 persons

appropriate distancing

description	Emergency standard
latrines	between 6 and 50 m from shelters
water point	<200 m from farest shelter
firebreak	every 300 m a 30 m wide firebreak, between seperate structures at least 2m

supporting facilities

description	standard
lighting	priority locations are latrines, WASH and public service area's
registration area	may include parking, medical clearance and distribution area
administration/office	depends on context
security post	depends on context
security fencing	depends on context

Figure 4.1, UNHCR camp structuring standards. Based on UNHCR Emergency Handbook, 2020

Figure 4.2, Satelite image of Qushtapa camp, Iraq. Based on imagery from ArcGis, 2020

can be made since there is no data available regarding this aspect.

As with all UNHCR planned refugee camps in this region, the different 'scales' (communities, blocks, sectors and settlement) with their standard dimensions are clearly visible. It strikes, however, that regarding fire-safety, the Handbook standards are not met. According to the UNHCR (2020), it is necessary to have a firebreak of at least 30 meter wide for every 300 meter of build area. When looking to the map, no clear firebreaks can be noted. Probably the areas with the amenities are used as firebreak as well (see figure 4.4) However, these leave more than 300 meter in between the breaks and are certainly not all 30 meter wide.

Regarding amenities, such as the food distribution center, the hospital, social centers and schools, the Handbook states that these should be located in the central parts of a camp so that they can easily be reached by all

inhabitants. In Qushtapa, this is clearly the case. Most public amenities are placed in the cross-shaped area in between the different 'shelter-quarters' (see figure 4.5). Most NGO (Non-Governmental Organization) offices are placed alongside the perimeter of the camp (see figure 4.5).

So, the sub-research question 2 ("How is a common UNHCR planned refugee camp structured?"), can be answered by stating that a common UNHCR planned refugee camp is structured following (planning) regulations of the UNHCR Emergency Handbook, on which is elaborated above.
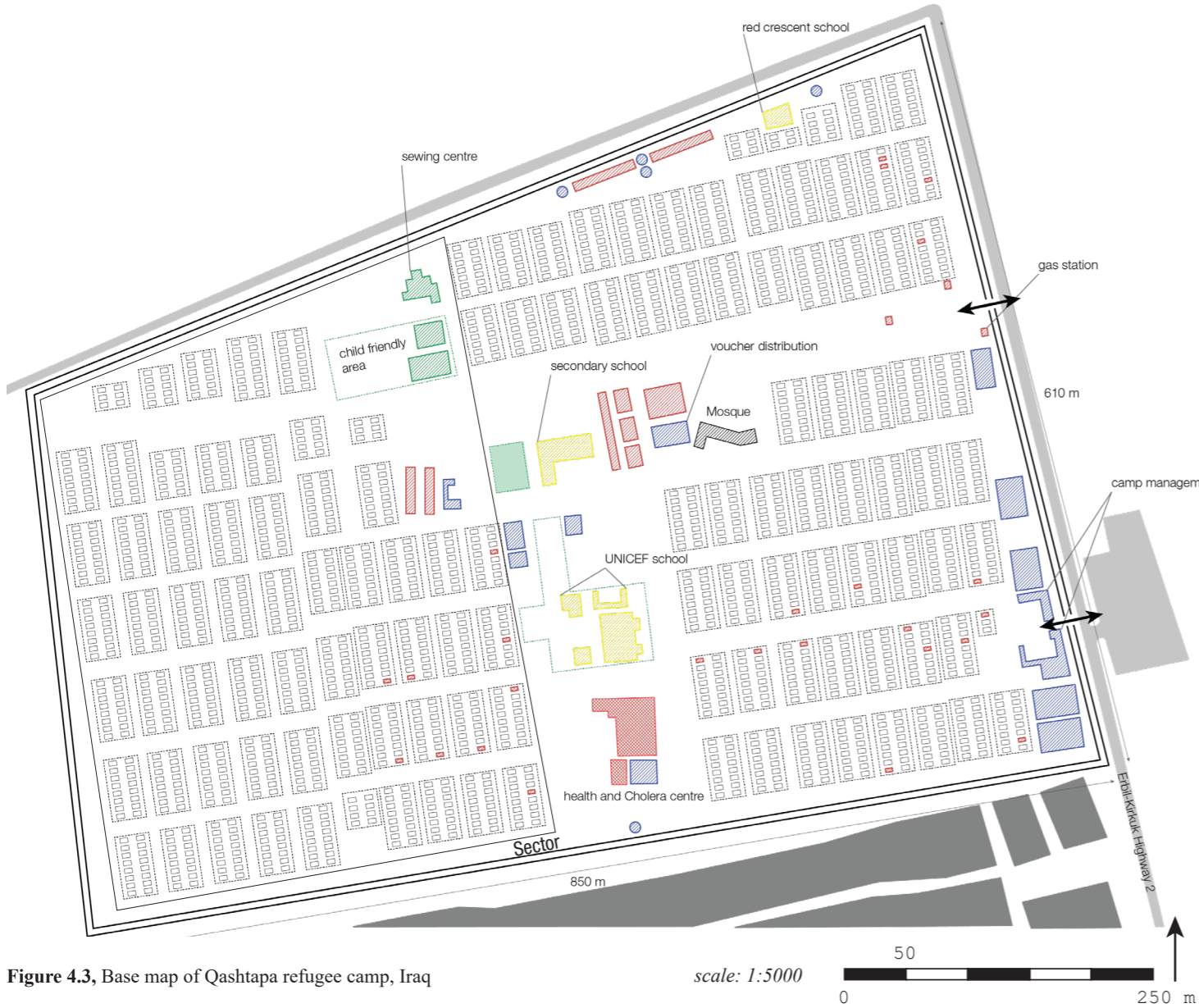
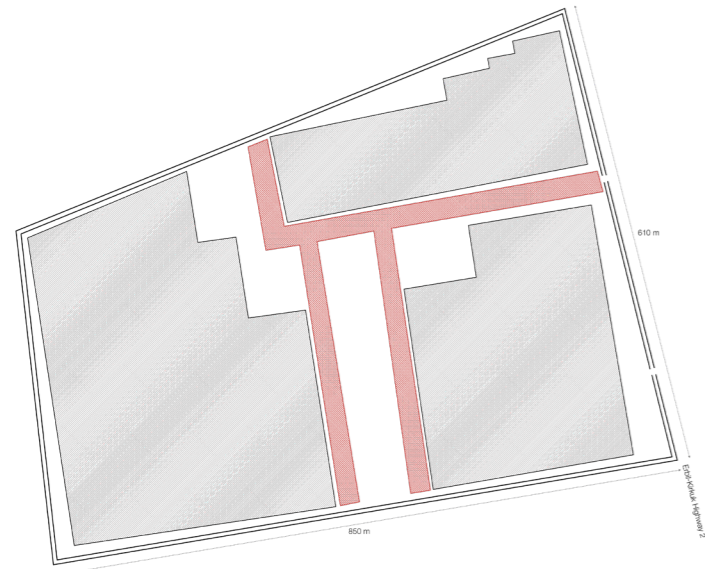**Figure 4.3,** Base map of Qashtapa refugee camp, Iraq

scale: 1:5000

50

0   250 m

Legend

Firebreak	Camp perimeter
Shelter quarters	

Figure 4.4, Firebreaks in Qushtapa refugee camp

Legend

Public functions	NGO offices	Main entrance
Shelter quarters	Camp perimeter	
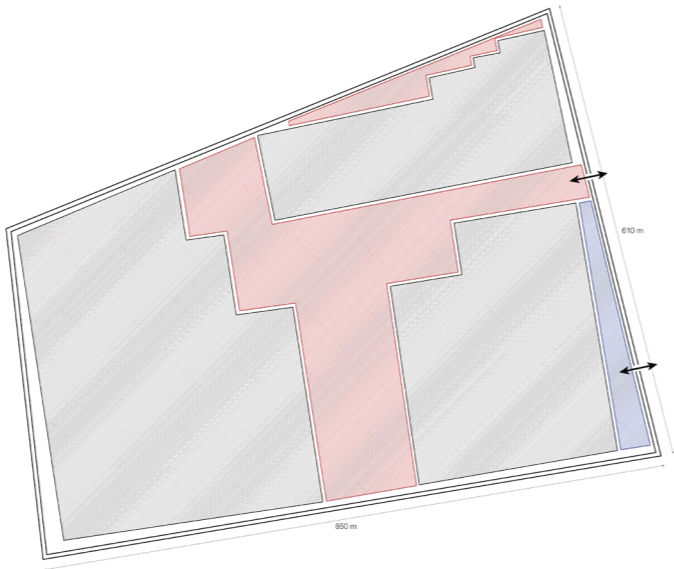
Figure 4.5, Function zoning in Qushtapa refugee camp

Sector, 5000 persons

Block, 1250 persons

Family, 4-6 persons

Community, 80 persons

Legend

Shop		Water storage
School		Camp perimeter
Social center		Wash center for cloths
Shelters		Shower, Latrine and Waterpoint
External roads		
External buildings		
Gravel road		
Spiritual center		
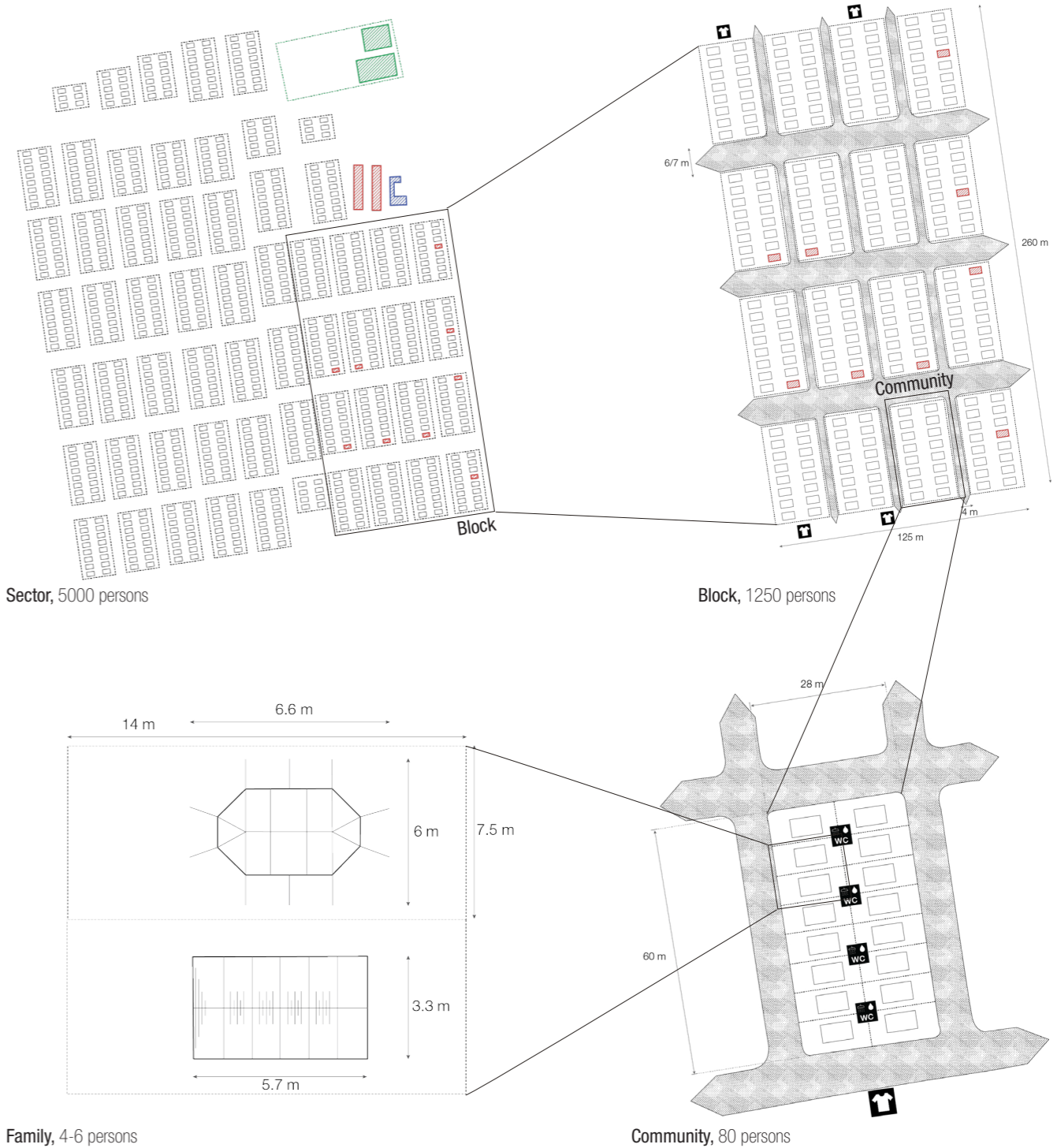
Figure 4.6, Different 'camp-scales' including their amenities

Defining Temporariness

Agamben (1998) describes a camp as a space of exception where different rules apply than in the space outside the camp. Due to the mandate of the UNHCR (see Chapter 1, Introduction), which only provides for temporary sheltering of people, one could state that both the function of a refugee camp (sheltering people) as the physical structures have to remain temporary. However, besides academic, societal and political discussions on how humane this approach is (Alshoubaki, 2017; Jahre et al., 2017), the desired temporality of refugee camps seem to differ per case due to the local political situation. As came forward, for instance, during the interviews with Marie Laure Hoedemakers and Arne Musch (respectively interviewees 4 and 5) (see Appendix I for Interview Sheets), refugee camps in Iraqi Kurdistan that house Syrian Kurds (e.g. Qushtapa Refugee Camp and Domiz I Refugee Camp) do not have to remain 'as temporal' as camps in Jordan that house Syrian refugees with a variety of ethnical backgrounds (e.g. Azraq Refugee Camp). In the Kurdish case, this is due to the political reason that the Iraqi Kurds want to increase the presence of Kurds in their area and therefore are less strict when Syrian Kurds want to stay (information based on Interviews with Hoedemakers and Musch (respectively interviewees 4 and 5)). This strongly contrasts with the situation in Jordan, where the Jordanian government is less inclined to house Syrian refugees (information based on Interviews with Hoedemakers and Musch (respectively interviewees 4 and 5)). These are just a few examples of what determines the 'desired' level of temporariness of refugee camps. Also the presence of, for instance, so-called hybrid governance, originated in communities that are spread over multiple borders and that besides having a national government also abide to local and historic defined informal governance structures (e.g. tribal structures), can influence this the level of temporality (information based on interview with Musch (interviewee 5)).

Derived from the interviews and literature on the topic, there seem to be three main physical elements that reveal the level of temporariness of a camp besides all kinds of non-physical measures such as legislation that prohibits refugees to work in host countries, these are: the location of the camp and the building types of the camp and the general camp lay-out (information based on interviews with Van der Made, Gräber, Musch and Kleinschmidt) (Alshoubaki, 2017; Jahre et al., 2017).

First of all, when looking at the location of a refugee camp, locating a refugee camp many kilometers away from the nearest urban developments (see case study on Azraq Refugee Camp, Jordan), makes 'rooting' and living on a specific place almost impossible without constant support structures. This makes it relatively easy to shut a camp down when desired just by removing its supporting services (e.g. providing water, food and electricity). Next to this, it gives a very clear message to inhabitants that the camp is just meant as 'holding facility' and not to built up a live there. Last, (economic) interaction between camp inhabitants and local residents is made very difficult due to physical distances thereby complicating any development in peoples situation (information based on Interviews with Van der Made, Gräber and Musch (respectively interviewees 2, 3 and 5)). Although, a remote location of a camp can

Figure 4.6, UNHCR 'UNHCR Framed Tent'
source: UNHCR, 2016, p. 14

Figure 4.7, UNHCR 'Refugee Housing Unit'
source: UNHCR, 2016, p. 19

have different reasons (e.g. to house refugees directly when they cross the border regardless of the remoteness of its location) the outcome for refugees from urbanized societies, especially when the effects are amplified by local governments, is the same (based on interview with Musch (interviewee 5)).

According to Alshoubaki (2017), temporariness regarding the build environment of the camp is defined by the use of temporary materials and light structures. This becomes all the more clear when looking at handbooks regarding standard structures such as the UNHCR handbook on

Figure 4.8, UNHCR 'Washblock Sinks in 20ft container'
source: UNHCR, 2016b, p. 10

shelter types that are used in refugee camps (UNHCR, 2016a) (see Figures 4.6 and 4.7) and standard UNHCR WASH-facilities (see Figure

Figure 4.9, relatively permanent self-build structures in Qushtapa Refugee Camp
From: "*VOANews*", by 'unknown', 2020

4.8). However, in some camps, the construction of more permanent structures is possible due to reasons as mentioned above (see Figures 4.9). Jahre et al. (2017, p. 323) add that following standards presented by the UNHCR and Sphere standards, camps are generally perceived as "temporary holding facilities" for refugees which manifests itself by camp designs based on efficiency, or in the words of Jahre et al. (2017, p. 326) "typically lead to warehouse-typical layout elements aiming to increase physical space utilization, decrease traveling distance and time, and increase throughput" (this was also illustrated by the analysis on common camp typologies elaborated upon above).

To conclude, temporariness in an UNHCR refugee camp setting is defined in physical sense by the remoteness of the camp, a physical lay-out that is focused on efficiency and the use of temporary materials and light structures (answer to sub-research question 3).

So, regarding this project, to fit in the current UNHCR paradigm of temporariness, it is important that all proposed interventions do not constrain camp-efficiency and remain relatively easy to remove when necessary.

4.2 UNHCR Phasing and common flow-structure

The UNHCR officially recognizes four phases of emergency response, according to the WASH-Manual of the UNHCR (2020). The first phase is the Emergency Phase (UNHCR, 2020, p.4). This phase is in place from the moment of stabilization of peoples movement into the area (and in our case the establishment of the camp) to six months hereafter (UNHCR, 2020). However, the UNHCR Global Strategy for Public Health 2014-2018 (2014) states that a return to this phase is possible in the case of severe set-backs such as the outbreak of a disease. The second phase of response the UNHCR uses is the so-called Transition Phase (UNHCR, 2020, p. 5). This phase runs from 6 months after the establishment of the camp to two years after this moment. The third and fourth phase are combined to, respectively, the Post-Emergency Phase and the Protracted Phase (UNHCR, 2020, p.5). This period officially ranges from 2 years to 20 years after the first occurrence of the emergency, however, in many cases, this period progresses even longer (UNHCR, 2020). In this project, the third and fourth phase will be fused together and hence forward be referred to as Post Emergency Phase, since they cover the same period and constitute the same level of affiliated support.

These three phases, are used by the UNHCR since they refer to different kinds and levels of support. In the Emergency Phase, all help is focused on ensuring the survival of people. During this phase, the absolute minimum requirements regarding the essential flows (water, food and processing of sewage sludge and waste) are used (see Figure 4.10). During the Post-Emergency Phase, the standards regarding amounts that people should receive of different flows is higher and the structures that provide these flows are more durable and efficient (see Figure 4.10) (UNHCR, 2020). As the name

already suggests, the Transition Phase is meant as an 'in between' phase to bridge the different requirements (UNHCR, 2020).

Regarding electricity and cooking fuel, it varies per situation. According to the UNHCR Sustainable Energy Strategy 2019-2024 (2019), Energy provision in the Emergency Phase is about providing cooking fuel, light and (if necessary) fuel for heating. Also energy for health centers should be provided (UNHCR, 2019). This is usually done by using diesel generators (UNHCR, 2019). In later phases, the goal is to provide enough electricity for lighting and charging devices (200Wh per household per day) as sustainable as possible (UNHCR, 2019). This, as alternative to the use of relatively expensive and polluting diesel generators. However, according to the same source, currently about 10% of all households in refugee camps have access to electricity. About cooking fuel, it is stated that in the second and third phase, there should be access to clean and if possible sustainable fuels, in other words, fuels that burn without giving smoke, since the use of solid 'non-clean' fuels at household scale accounts for roughly 25% of globally so-called black carbon emissions (UNHCR, 2019, p. 16).

Provision and processing of basic ammenities

description		Emergency Phase	Transition Phase	Post Emergency Phase
	WATER			
drinking water		7.5-15 Liter/p/day; bottled water; distribution from watertruck with Jerrycans	15-20 Liter/p/day; extention of existing waternet; temporary piped network connected to wells or surface water treatment facility;	>20 Liter/p/day; permanent waternet connected to shelters using watertowers for pressure
rainwater		-	-	collect rainwater
	ELECTRICITY	'solar light' (see Figure 4.12); electricity for health centers; diesel generators	provide enough for light and charging devices (200wh/household/day); try to use sustainable generation methods	-
	COOKING FUEL	provide fuel for first 4-5 months; provide stoves; fuel for heating if needed	create access to clean and sustainable fuels	-
	SEWAGE SLUDGE	1 toilet per 50 people; using pit toilets (see Figure 4.11); chemical toilet; daily dislodge dislodgeble toilets	1 toilet per 20 people or four households	1 toilet per household; all toilets either connected to sewage system or dislogeable
	SOLID WASTE	collectionservice using bins; dump in rubbish pits	transfer to durable solution of third phase	landfill (see Figure ; household pits; recycling program

Figure 4.10, UNHCR flow standards throughout the phases, measures are not repeated when they are identical to the previous phase source: UNHCR, 2020, p. 6-7
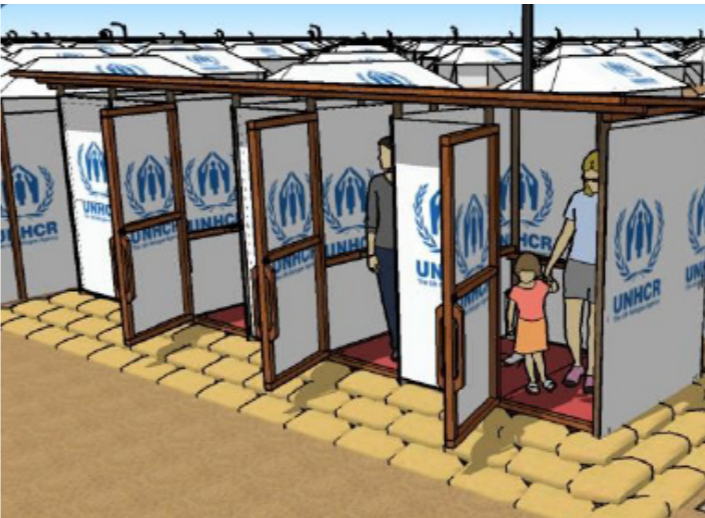

Figure 4.11, Emergency Phase 'trench-latrine' source: UNHCR, 2015, p. 17

Figure 4.12, use of solar-powered lights (WakaWaka) after dark From "*RTL Nieuws*", by unknown, 2018

Emergency Phase

Transitional Phase

Post Emergency Phase

0   6 months   2 years   20 years
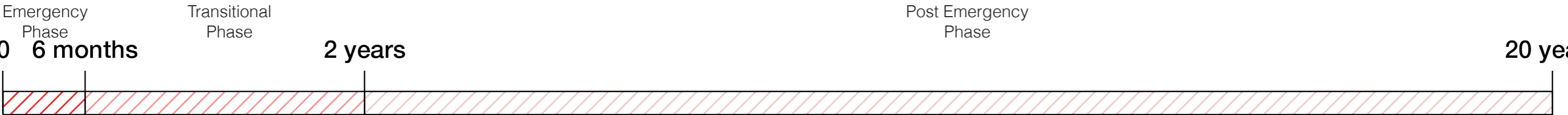
Figure 4.12, no light after sunset, Azraq Refugee Camp, Jordan before light installation project
From *"Ikea Foundation"*, by C.Williams, 2014

Figure 4.13, official wast collection site in Algeria.
From *"innovasjonnorge"*, by UNHCR, 2019

Figure 4.14, installation of streetlighting, improving safety, Azraq Refugee Camp, Jordan after light installation project
From *"Atlas of the Future"*, by W. Pag, n.d.

Figure 4.15, cooking on wood in a refugee camp in Rwanda
From *"UNHCR Innovation Service"*, by A. Hollmann, 2017.

4.3 Stakeholders in UNHCR Planned Refugee Camps

UNHCR planned and managed refugee camps, usually have several stakeholders. According to Bazuin (2018, p. 50) who conducted a stakeholder analysis of Zaatari Refugee Camp in Jordan, there are six main groups of stakeholders active in this camp, these are: the Jordan Government, UN agencies, International NGO's, Researchers, International donors and local NGO's. This connects with information provided by Van der Made, Gräber, Musch, Kleinschmidt and Koning during interviews (respectively interviewees 2, 3, 5, 6 and 7). They stated that usually, the UNHCR constructs a camp by hiring local workforce while they have a managerial function. Everything they do falls under the UN-Mandate, to ensure legal foundation. All of this in cooperation and deliberation with the local government. In case of larger projects or prolonged situations, investments are often made that also benefit the local community (UNHCR, 2020). It is also stated repeatedly that as many materials as possible should be acquired locally to reduce their footprint and to enhance the local economy (UNHCR, 2020). After the initial construction phase, the UNHCR keeps a managerial function and coordinates both UN-agencies and NGO's that serve specific needs, such as education or sewage management. Both Van der Made and Musch (respectively interviewees 2 and 5) described it as the UNHCR as main contractor who hires and/or coordinates several sub-contractors, such as Oxfam and UNICEF. In large refugee camps, these organizations, often also have several 'sub-contractors' as well to which they delegate specific tasks. Especially in protracted situations, the need for consultation with local governments seems to increase since more interventions are needed that fall on the border of the UN-mandate. According to Musch (interviewee 5), This effect is strengthened by the fact that

throughout time, the focus increasingly shifts from providing humanitarian help to increasing resilience. Besides acting as partner who has the final say, the local government is also sometimes asked to become involved in the internal affairs of a camp, for instance security (information from interview with Van der Made and Musch, respectively interviewees 2 and 5). As with granting permission for a camp to stay for prolonged periods of time on a specific place, a local government may use this as negotiation tool to make that the UNHCR, international NGO's and international donors also invest money in local development projects (information from interview with Van der Made, Gräber, Musch, Kleinschmidt and Koning respectively interviewees 2, 3, 5, 6 and 7). This information is recapitulated in the scheme on the next page, see Figure 4.16.
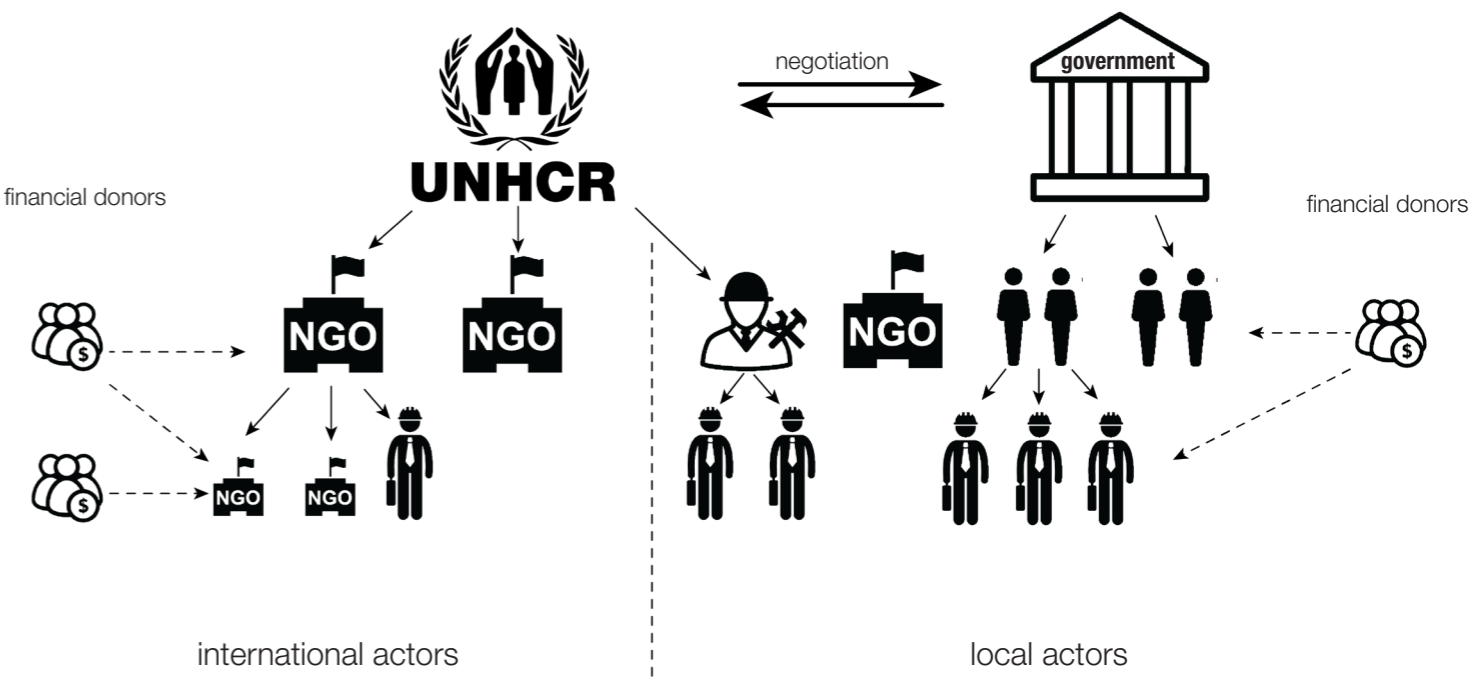
Figure 4.16, scheme of all involved stakeholders

As discussed in the previous sections, Qushtapa refugee camp is a refugee camp in Iraqi Kurdistan which currently houses approximately 7900 (mostly) Syrian Kurdish refugees (UNHCR, 2018) (see figures 4.7 and table). Qushtapa was opened on August 19th, 2013 (UNHCR, 2018). It was designed by the UNHCR Erbil Technical Unit and is currently managed by Omar Taha Rasool from the Barzani Charity Foundation (BCF) (UNHCR, 2018). The camp is located next to Highway 2 from between Kirkuk and Erbil near the village Qushtapa. The camp covers an area of 416,268 m2 providing room 1819 shelter plots and their necessary amenities (UNHCR, 2018).

As discussed above, the lay-out of Qushtapa clearly follows the guidelines of the UNHCR Emergency Handbook (see Figures 4.20 and 4.22). However, when regarding photo's of the camp (see Figures 4.23 and 4.24), it becomes clear that relatively permanent structures are placed at the camp that reduce its temporary character. The reason why this is allowed, may be that the majority of the camp-inhabitants are Syrian Kurds, therefore belonging to the same etnicity as most local residents (UNHCR, 2018).

According to the 'Information kit' (UNHCR, 2018) on refugee camps in this area, there are 33 agencies active in different fields, including governmental actors, UN-agencies, international NGO's and local NGO's (see Figure 4.19).

Figure 4.17, South West Asian region with the location of Qushtapa

general information

description	standard
number of inhabitants	7900 (2018)
age of camp	7 years
urban or rural context	urban
'fame' of camp	easy to locate

camp flows

provided flows	per month	processed flows	per month
water	8410 m^3	grey water	7190 m^3
electricity	125.0 MWh	sewage sludge	265 m^3
cooking energy	150.0 MWh	solid waste	19223 kg

Figure 4.18, general information and flows on Qushtapa Refugee Camp

stakeholders

protection	**food**	**health**	**shelter**	**education**
ACTED, Al-Masala, DOLSA, DCVAW, DRC, GSIO, IMC, Intersos, IRC, KURDS, NRC, PAO, Qandil, TDH Italy, Triangle GH and UNHCR	WFP and World Vision International	DoH, IMC, IOM, Jiyan, PWJ, UNFPA, UNHCR, UNICEF and UPP	KURDS, NRC, Peace Winds Japan and UNHCR	ACTED, Darya, Intersos, IOM, IRC, IVY, TDH Italy, Triangle GH, UNHCR, UNICEF, UPP, Zhin and ZOA
	basic needs	**livelihoods**	**WASH**	
	ACTED, IVY, Qandil, Triangle GH and UNHCR	DRC, IOM, REACH, RI and UNDP	DESW, DoSW Erbil, EJCC, Peace Winds Japan, RI, UNHCR and UNICEF	

Figure 4.19, stakeholders ordered per type of assistance. UNHCR, 2018, p. 31

Figure 4.20, satelite image of Qushtapa camp, Iraq. Based on imagery from ArcGis, 2020

Figure 4.21, Contextual map of Qushtapa refugee camp
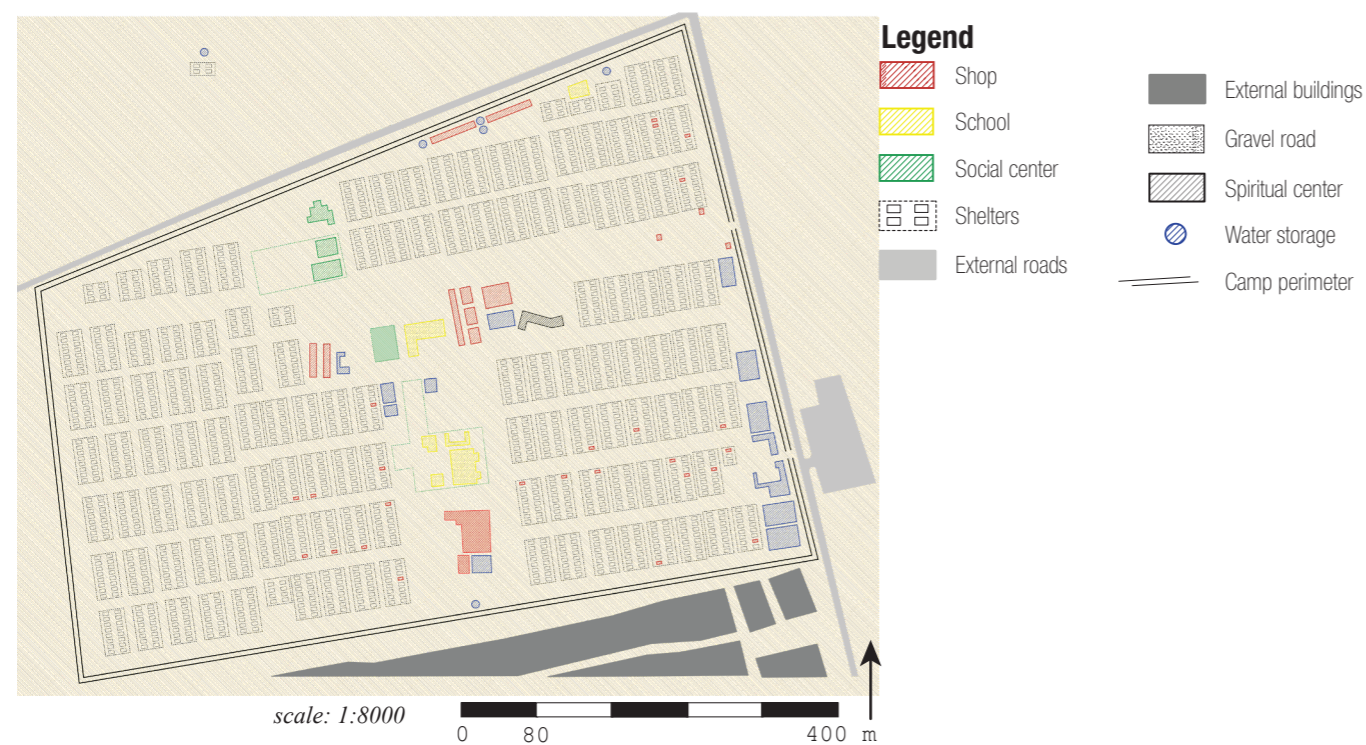
Figure 4.22, base map of Qashtapa Refugee Camp, Iraq

Figure 4.23, street live at Qushtapa with streetlights and semi-permanent structures. From "*theuprooting*", by E.S. Jalil, n.d.

Figure 4.22, girl in front of her upgrated shelter. From "*theuprooting*", by E.S. Jalil, 2016.

Figure 4.25, outdoor movie-night at Qushtapa. From "*IPFF Peacefilm*", by unknown, n.d.

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps

Analysis of Current Practices
Case Studies

4.4 CASESTUDIES | DOMIZ I REFUGEE CAMP, IRAQ

Domiz I was opened April 1st, 2012 (UNHCR, 2018). The lay-out of the camp was prepared by the UNHCR Erbil Technical Unit. Currently the camp is managed by Sardar Younis. The camp is located near the city of Duhok in the province that bears the same name (UNHCR, 2018). Currently 32, 592 people reside in the camp divided over 5948 shelter plots (UNHCR, 2018). Most of these people are Syrian Kurds from Hassakeh and Damascus (UNHCR, 2018). The camp area has a size of 1.750.000 m2 (UNHCR, 2018).

As can be seen in Figures 4.29 and 4.31, this camp has more or less the same grid as most UNHCR planned camps, however, density is increased by reducing the number of cross-streets. By structuring the shelters in this way, the number of people living in a community-block (see section 4.1) is roughly doubled. The consequences this has for the available ammenities are not clear. Last, in the center, a different structure can be seen. This could point to different building phases of the camp. As in Qushtapa, shelters in Domiz I also graduated to more permanent structures over the years (see Figures 4.32 and 4.33).

In Domiz I, there are 26 agencies active divided over the same topics as with regard to Qushtapa (UNHCR, 2018) (see Figure 4.28).

Figure 4.26, South West Asian region with the location of Domiz I

general information

description	standard
number of inhabitants	32,592 (2018)
age of camp	8 years
urban or rural context	rural
'fame' of camp	easy to locate

camp flows

provided flows	per month	processed flows	per month
water	34696 m³	grey water	29665 m³
electricity	515.5 MWh	sewage sludge	1095 m³
cooking energy	618.6 MWh	solid waste	79307 kg

Figure 4.27, general information and flows on Domiz I Refugee Camp

stakeholders

protection	food	health	shelter	education
ACTED, DOLSA, DCVAW, DRC, GASHBUN, HARIKAR, IMC, IRC, Qandil, SCI and UNHCR	WFP and World Vision International	DoH Duhok, IOM, Jiyan, MSF-CH, PWJ, PUI, IMC, UNFPA, UNHCR, UNICEF and UPP	BRHA, Peace Winds Japan, Qandil and UNHCR	ACF, ACTED, Darya, IOM, IRC, NRC, PUI, UNHCR and UNICEF
	basic needs	**livelihoods**	**WASH**	
	ACTED, DOLSA, Qandil and UNHCR	DRC, IOM, Peace Winds Japan, REACH, RI and World Vision International	BRHA, DoH Duhok, DoW, Peace Winds Japan, PU-AMI, UNHCR and World Vision International	

Figure 4.28, stakeholders ordered per type of assistance. UNHCR, 2018, p. 31

Figure 4.29, Satelite image of Domiz I camp, Iraq. Based on imagery from ArcGis, 2020
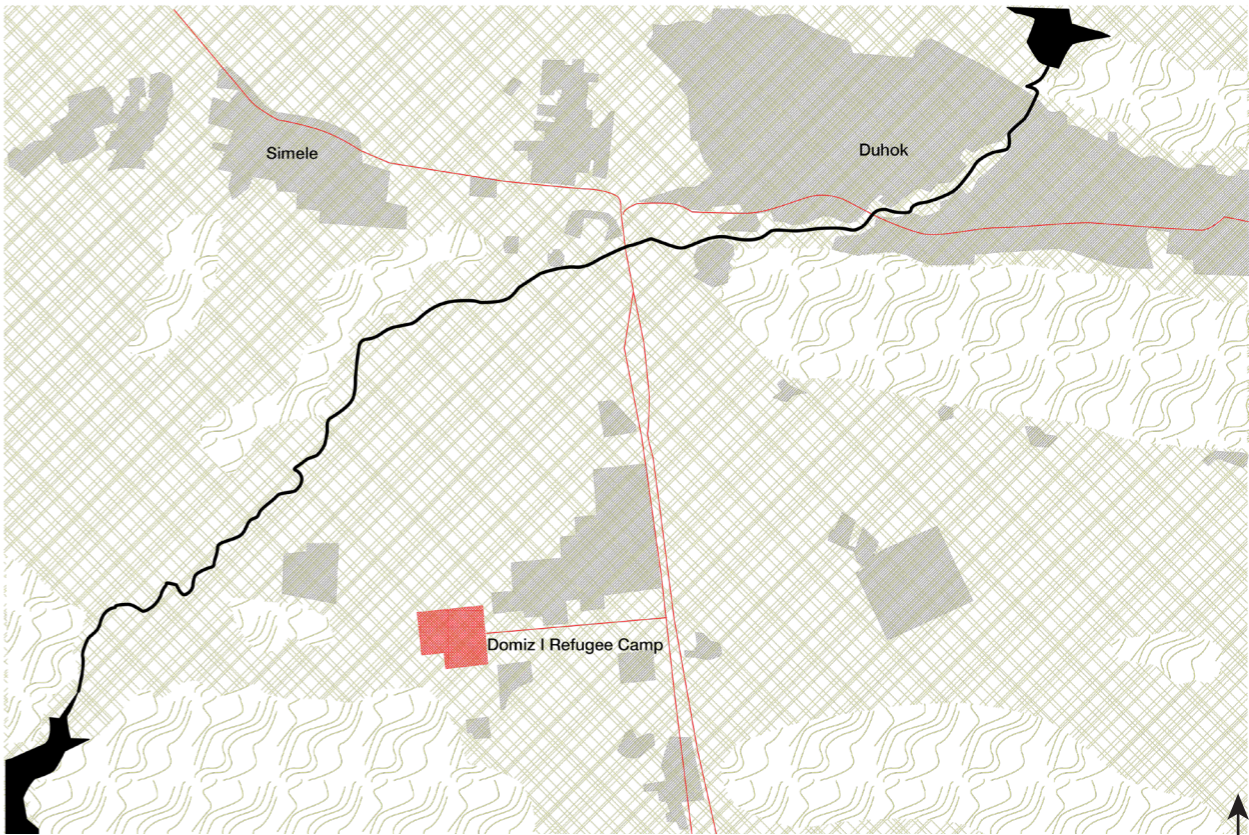
Figure 4.30, Contextual map of Domiz I refugee camp

scale: 1:375000

Legend

▨ Shop	⊞ ⊞ Shelters	▦ Gravel road	══ Camp perimeter
▨ School	▨ External roads	▨ Spiritual center	
▨ Social center	▨ External buildings	◉ Water storage	

scale: 1:8000

0   80   400 m

Figure 4.31, base map of Domiz I Refugee Camp, Iraq

Figure 4.23, long rows of tents in the first stage of construction at Domiz I. From "*UnitedWorldProject*", by unknown, 2015.

Figure 4.33, shelters upgraded to concrete buildings with watertanks and streetlights. From "*Semantic Scholar*", by F.A. Amin, 2017.

Azraq refugee camp is designed and managed by the UNHCR. In capacity, they cooperate with other UN agencies, the Jordan government, local NGO's and international NGO's (UNHCR, 2020). The camp is located in Jordan near the highway 35, approximately 25 km away from other urban developments. Currently the camp houses 37,332 Syrian refugees from different regions in Syria (UNHCR, 2020). The camp was opened on April 30th, 2014 and is designed to house 50 000 people which can be expanded to 130 000 people (UNHCR, 2020). As can be seen in Figures 4.37 and 4.39, the camp has a very typical 'UNHCR-structure' consisting of several sectors which are seperated from one another. According to Van der Made and Gräber (respectively interviewees 2 and 3), this is done to better control its inhabitants. As can be seen in Figure 4.38, the camp is at a very remote location, hindering any spontanious interaction with local residents. Together with the very typical lay-out and the fact that no space if provided for any self-construction of structures (see Figures 4.40 and 4.41), makes that this camp can really be seen as a temporary 'holding-facility' instead of a settlement.

As with the previous case-studies a great number of stakeholders including many governmental organizations, UN agencies and both international and local NGO's are involved in running the camp (UNHCR, 2021).

Figure 4.34, South West Asian region with the location of Azraq

general information

description	standard
number of inhabitants	37,332 (2018)
age of camp	8 years
urban or rural context	remote location
'fame' of camp	easy to locate

camp flows

provided flows	per month	processed flows	per month
water	39743 m^3	grey water	33980 m^3
electricity	590.5 MWh	sewage sludge	1254 m^3
cooking energy	708.6 MWh	solid waste	90841 kg

Figure 4.35, general information and flows on Azraq Refugee Camp

stakeholders

governmental organizations

SRAD, Ministry of Labour (MoL), Ministry of Public Works and Housing (MPWH), Ministry of Water and Irrigation (MWI), Ministry of Health (MoH), Ministry of Education (MoE), Ministry of Justice (MoJ), and Ministry of Social Development (MoSD), Sharia'a Court, Civil Registry Department and Family Protection Department

UN agencies

International Labour Organization (ILO), International Organization for Migration (IOM), United Nations Population Fund (UNFPA), United Nations Children's Fund (UNICEF), United Nations Office for Project Services (UNOPS), UN Women, World Food Programme (WFP)

international NGO's

Action Against Hunger (AAH), Agency for Technical Cooperation and Development (ACTED), CARE, Danish Refugee Council (DRC), Finn Church Aid (FCA), International Committee of the Red Crescent (ICRC), International Medical Corps (IMC), International Orthodox Christian Charities (IOCC), International Rescue Committee (IRC), Mercy Corps, Norwegian Refugee Council (NRC), Plan International, Questscope, Relief International, War Child, and World Vision (WV)

local NGO's

Al Hussein Society (AHS), Arab Medical Relief (AMR), Arab Renaissance for Democracy and Development (ARDD), Business Development Centre (BDC), Holy Land Institute for Deaf (HLID), Noor Al Hussein Foundation (NHF)

Figure 4.36 stakeholders ordered per type of assistance. UNHCR, 2021, p. 1

Figure 4.37, Satelite image of Azraq camp, Yordan. Based on imagery from ArcGis, 2020
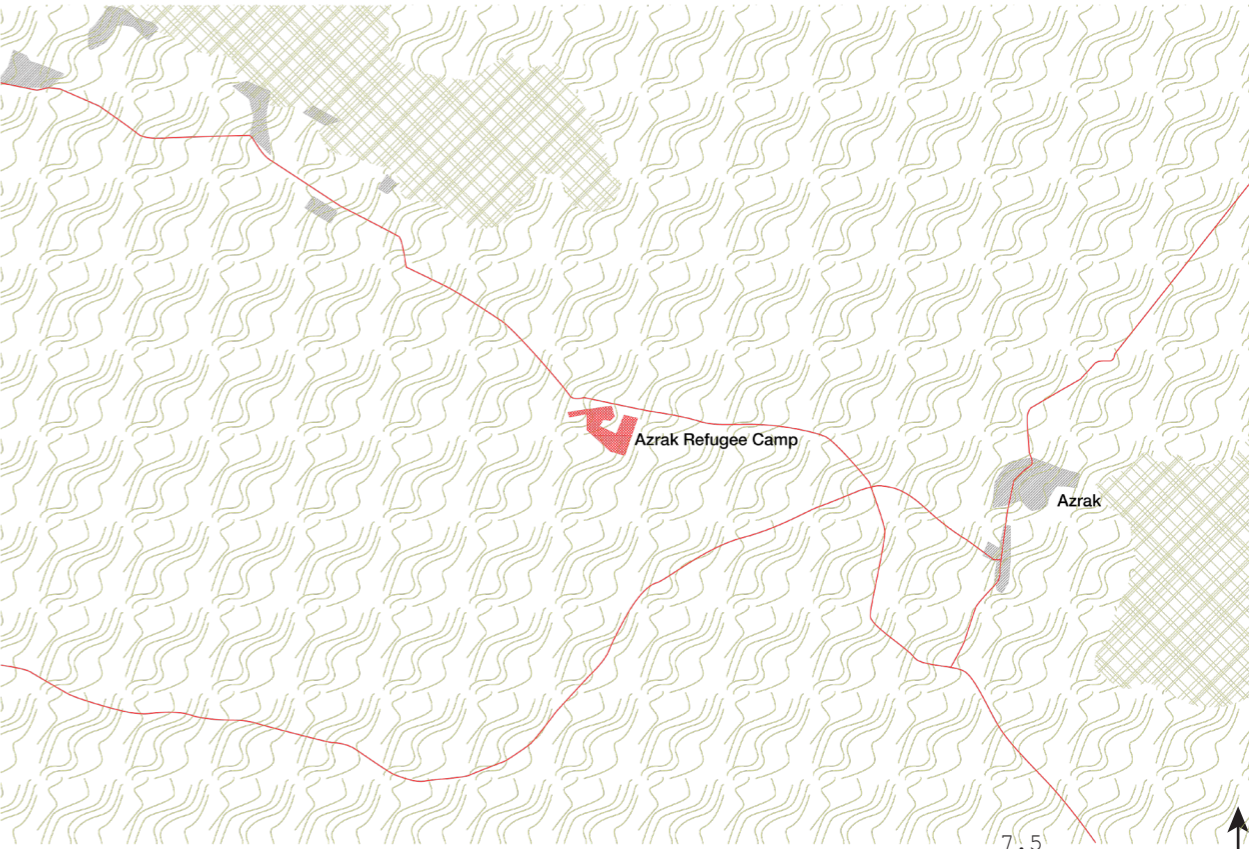
Figure 4.38, Contextual map of Azraq refugee camp

scale: 1:375000

Figure 4.39, base map of Azraq Refugee Camp, Jordan

Legend

▨ Shop		▨ External buildings	
▨ School		▨ Gravel road	
▨ Social center		▨ Spiritual center	
▨ Shelters			
▨ External roads			

scale: 1:8000

0   80   400 m

Figure 4.40, standard UNHCR shelters without any form of self-structuring at Azraq. From "*Macleans*", by J. Pix, 2014.

Figure 4.41, a waste recycling project, called 'Green Centre' provides jobs in the camp. From "*EU Neighbours*", by World Vision, 2020.

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps

Analysis of Current Practices
Case Studies

5

ANALYZING SPATIAL ELEMENTS

As will be discussed below in Chapter 6, the design-part of this graduation project has two main perspectives regarding its interventions, a flow-related perspective and a spatial perspective. Camp-flows are relatively easy to quantify. Because of this, it is also relatively easy to see what interventions are usefull to reach the goals of (informal) economic activity and spatial self-determination and what not. Regarding spatial interventions, however, this becomes more laborious. Therefore, this chapter will elaborate on spatial elements that enhance (informal) economic activities and/or spatial self-determination. This will be done by spatially analyzing cases of four different types of spaces, namely squares, courtyards and streets, communal gardens and covered markets or bazaars. Findings from this analysis will be substantiated by scientific findings from the academic community. After a description of the selectionprocess (section 5.1), four sections will each treat one of the 'space-types' mentioned above.

5.1 Case Selection and Section Structure

A concept that, in its various forms, can be seen as a result of spatial self-determination and is even described to enhance (informal) economic activity, is spatial appropriation. Lara-Hernandez, Coulter and Melis (2020) discuss two types of spatial appropriation.

First of all, they discuss a static type where appropriation is expressed by relatively permanent informal structures creating a permanent condition (Lara-Hernadez, Coulter, and Melis, 2020). This can be perceived as a (permanent) form/result of spatial self-determination since people structure their own physical environment.

The second type of spatial appropriation Lara-Hernandez, Coulter and Melis (2020) discuss, is a form of appropriation where space is only occupied for a limited amount of time for specific activities or types of uses, such as a market. This is also a form of spatial self-determination since people choose themselves how they want to use a space.

The cases that will be analyzed, consist of different types of space that are also present in refugee camps (e.g. streets, squares). Their selection is based on the fact that they show one or both types of spatial appropriation or house a certain degree of (informal) economic activity. This is determined on basis of own experience and literature. Regarding squares, for instance, spatial appropriation can be expressed by the fact

that it is used in a variety of ways that reflect the local needs at different moments. These different uses include, for example, that the square is used as a place to sport, host a market, to picknick, to play and to meet. With regard to courtyards and communal gardens, spatial appropriation may be more expressed by (semi-)permanent structures or arrangements made by the users of the space, such as residents placing or constructing plants, furniture and pathways. Last, regarding covered markets or bazaars, (informal) economic activity is proven by virtue of their existence, while spatial appropriation (and therefore spatial self-determination) is expressed by a transitional zone between the individually owned shop and the public route that runs past it.

In each section, the selected cases will be discussed regarding universal elements that make that they enhance (informal) economic activity and/or spatial self-determination. When all cases of a section are handled, a final sub-section will recapitulate the findings and relate them with academic findings on the topic.

Of course, the principles found in this chapter are not finite and there may be many other principles that would also contribute to the design of an intervention that would enhance (informal) economic activity and/or spatial self-determination. However, the principles mentioned above are universal and form a clear framework that can be used.

5.2 SQUARES | LEIDSEPLEIN, AMSTERDAM

5.2 Squares

Three squares are included in the analysis: Leidseplein (Amsterdam), Amstelveld (Amsterdam) and Kastanjeplein (Amsterdam). These squares are chosen based on the fact that they are all used in different configurations throughout the year, that they are rated high by inhabitants on the list of squares in Amsterdam and/or that they have a certain level of economic activity (Witman & De Haan, 2010). Besides, I know them personally, enhancing my understanding of the place. In this section, each square will be discussed in a separate sub-section. When all squares are reviewed, a final sub-section will discuss similarities and will place the findings in relation to academic findings on this topic.

Leidseplein, Amsterdam

The Leidseplein (see Figures 5.1 and 5.4) is one of the most metropolitan squares of Amsterdam, having different functions and use throughout different timecycli. First of all, it is one of the main entertainment squares of Amsterdam. Besides this, however, it is also used for different forms of traffic and provides space for terraces (see Figure 5.5). Last, it houses many different kinds of functions, including theaters, music halls, a cinema, a hotel, cafes and shops that result in much economic activity (see Figure 5.5). Several elements are striking. First of all, the square itself is divided in several parts, due to strongly staggered buildings that surround the square (see Figure 5.2). Especially the Stadsschouwburg, really divides the square in two. This together with the different heights and characters of the building façades and the fact that all adjoining streets are curved or end in a T-section make that lines of sight are broken and smaller spaces, that give a feel of enclosure and therefore safety and unclutteredness, originate. This effect is strengthened by the different heights and types of pavement. Next to these bordering and enclosing factors, the wide variety of the functions located at the square make that people have a clear reason to go there. This traffic in turn is facilitated by different routes leading to the square. These routes come from all directions, facilitate different modes of transport and have different capacities (see

Figure 5.5). Some of these routes, such as the Leidsestraat, do not end at the square but run through it, creating more activity on the square. Last, different tree-patterns create shade and a confined space at different places at the square enabling better orientation and mitigating climate at hot days (see Figure 5.3).

Figure 5.1, buildings, water and main routes
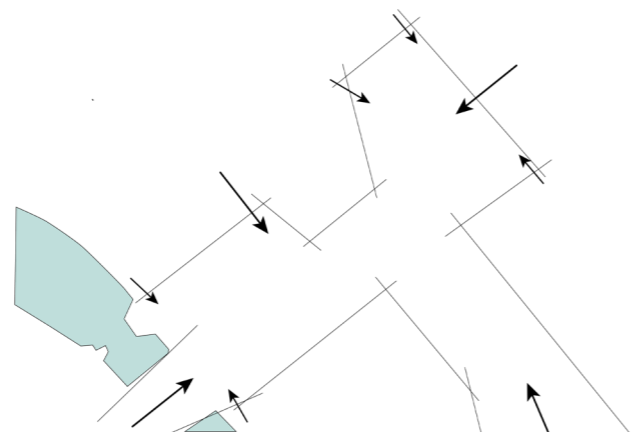
Figure 5.2, staggered borders and different entrances of different scales
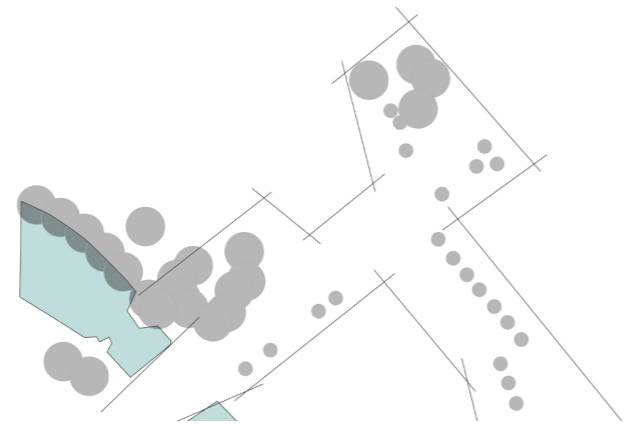
Figure 5.3, creation of places due to staggering borders and routes and places of shade

Figure 5.4, aerial photo of the Leidsplein. Based on imagery from ArcGis, 2020

Figure 5.5, different functions, enclosed areas and modes of transport. From "*IndeBuurt*", by C. Van der Meij, 2017.

5.2 SQUARES | KASTANJEPLEIN, AMSTERDAM

Kastanjeplein, Amsterdam

The Kastanjeplein (see Figures 5.6 and 5.9) is described by Witman & De Haan (2010) as a friendly outdoor room for the neighborhood (see Figure 5.10). Except for several local shops, a hairdresser and a bar, the square consist of houses that are built in the same style, but have different building heights. Together with small 'façade gardens', old trees, which also mitigate climate at hot days, and an artwork this gives character to the place, thereby making the place more interesting to reside (see Figures 5.8 and 5.10). Besides creating character, the 'façade gardens' also form a transition space between the private home and the public square. The square can be accessed by roads approaching the square from different angles, making that light traffic passes by, which creates activity, and that people perceive the square from different perspectives when arriving (see Figures 5.6 and 5.7). On the square, different types of spaces are delineated by using different pavement types and different heights at which this pavement is constructed. This provides space for different types of uses on the square, such as traffic, walking, playing, sitting and meeting (thereby enhancing spatial self-determination of the users). This effect is strengthened by placing elements such as benches at the square that enable specific types of activities.
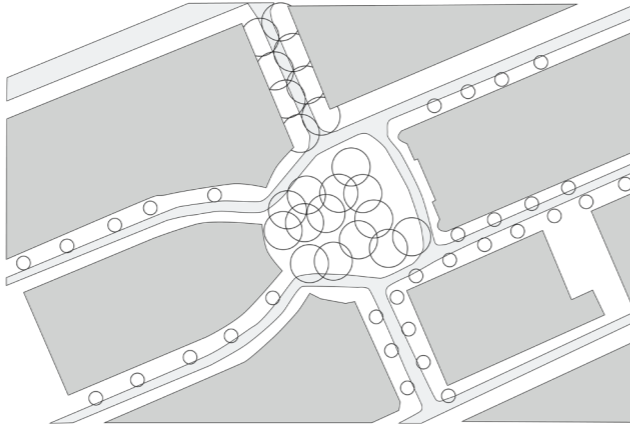
Figure 5.6, buildings, tree canopy and main routes
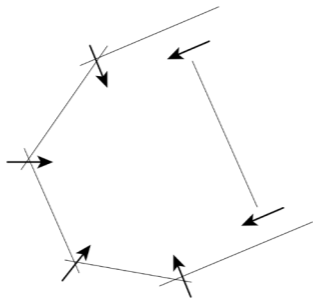
Figure 5.7, surrounding borders and different entrances
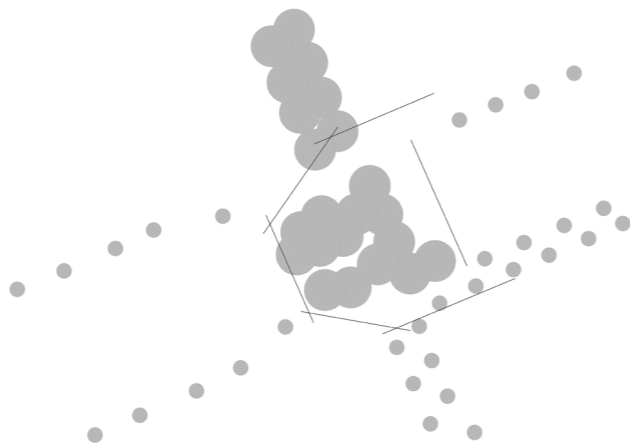
Figure 5.8, creation of one place due to surrounding borders and a tree canopy providing shade during hot weather

Figure 5.9, aerial photo of the Kastanjeplein. Based on imagery from ArcGis, 2020

Figure 5.10, the square can be used in very different ways, this photo shows a 'name-project' to remember Holocaust victims. From "*HartAmsterdam*", by M. Linsen, 2015.

5.2 SQUARES | AMSTELVELD, AMSTERDAM

Amstelveld, Amsterdam
The Amstelveld in Amsterdam (see Figures 5.11 and 5.14) is a square which is primarily used by the neighborhood (Witman & De Haan, 2010). Like the Leidseplein and the Kastanjeplein (see above), the Amstelveld has varying and staggered borders of which the buildings also have different heights. This makes the place interesting and pleasant to stay (see Figures 5.12 and 5.15). However, the square also has two sides which are bordered by a street, tree-row and water. This is an open type of border which allows a view to an area which is not accessible. The building on the North-West part of the square divides the square in two main parts, by breaking lines of sight from different perspectives (see Figures 5.11 and 5.12). This effect is further accentuated by the tree-rows, which also further enclose the two parts, and the different attributes on the square such as football goals, water-garden and a Jeu de Boules-field (see Figure 5.15). This enables and stimulates different uses of the square, even at the same time. As the Leidseplein and the Kastanjeplein, the Amstelveld has multiple entrances. However, the main routes run along the square instead of crossing it, creating a quiet, safe and enclosed place to reside (see Figures 5.11 and 5.12). Different types of pavement accentuate different parts of the square and thereby enable different usages. Last, tree-rows on the square and on the roads leading to the square, create both shade during hot weather and a vertical border, enhancing a feel of enclosedness (see Figure 5.13).
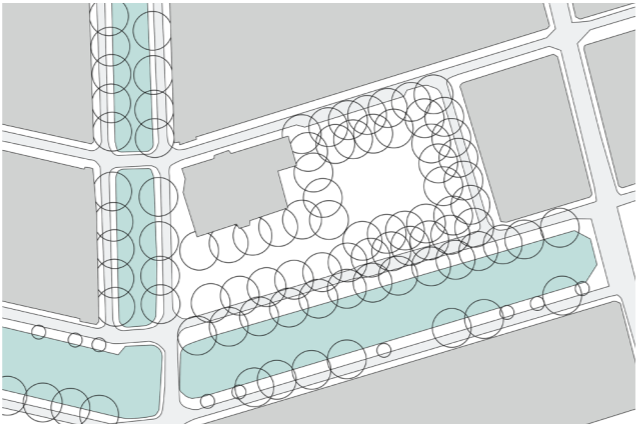
Figure 5.11, buildings, tree canopy and main routes
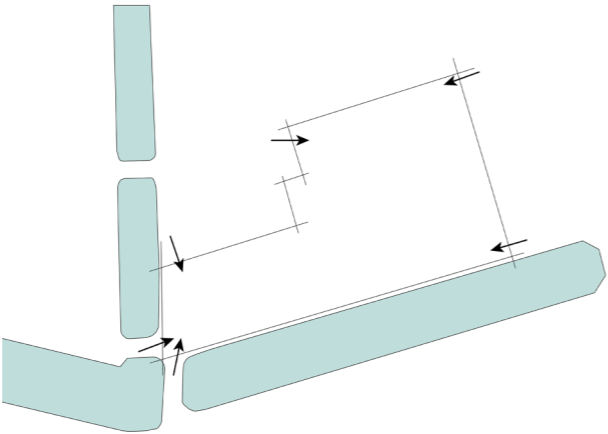
Figure 5.12, staggered borders and different entrances
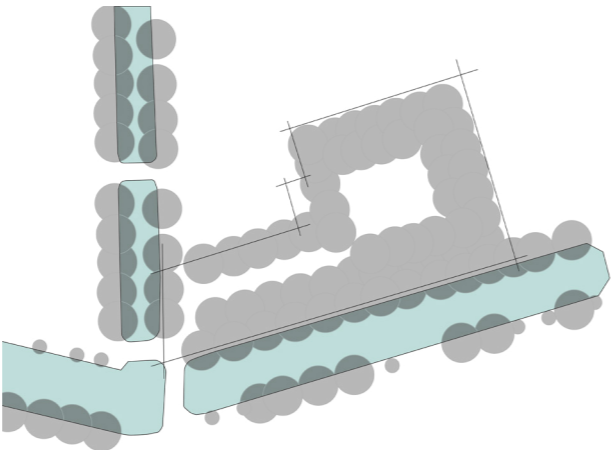
Figure 5.13, creation of two places due to staggering borders and different tree canopies also providing shade during hot weather

Figure 5.14, aerial photo of the Amstelveld. Based on imagery from ArcGis, 2020

Figure 5.15, the square can be used in many different ways, such as playing soccer and hosting a market. From "*NRC*", by NRC, n.d.

Conclusion

Regarding all three squares there are several striking similarities. First of all, all squares have broken lines of sight at the square itself and/or towards the streets that connect to it. This effect is often strengthened by protruding elements such as buildings and/or other visual obstructions including trees or artworks (Witman & De Haan, 2010). Together with the varying façade appearances and heights, this gives a feel of enclosure and therefore a sense of a safe place to reside. This in turn creates a context in which spatial self-determination can take place. Also the use and importance of different pavement types to delineate different spaces is a reoccurring element. Moughtin (2003, p. 111) acknowledges the importance that a specific type of pavement or the use of different pavement types have on space by stating "The pavement […] hold[s] together what, otherwise, may have been a formless space leaking in all directions". By creating a sense of space, pavement can also form different areas for different uses, thereby enabling the use of the square in different capacities. Another resemblance is that all squares have different entrances and these entrances also have different scales. Multiple curved routes from different scales and from different directions leading to the square make that it really becomes a center where different activities can be deployed (Alexander, 1977; Moughtin, 2003). This enhances spatial self-determination and creates extra activity which enhances (informal) economic activity in case there are (work)shops present. Besides this, it creates different perspectives from which the square can be perceived. Regarding routes crossing the square, the square should be the main destination for people using those routes, otherwise the square becomes a place of movement instead of residence (Moughtin, 2003). Routes of traffic may, however, be placed along a square. This creates activity without hindering the square-function itself (see both the Kastanjeplein and the Amstelveld). Last, different attributes on a square, such as benches, artworks, waterelements and sport attributes, enable and

stimulate different uses of the square, thereby enhancing spatial self-determination.

Houthoek, Delft

Houthoek is a small dead-end 'street' in the center of Delft (see Figures 5.16 and 5.20). In this 'street' which, due to its shape almost forms a courtyard, there is a high degree of spatial self-determination in the form of many semi-permanent structures, including furniture and plant pots, which are placed along the borders. This reveals that this area is perceived as a communal area which is owned by the people living around it. As can be seen in Figure 5.17, the area only has one entrance which makes that no regular traffic passes by in contrast to the small open space at the Eastern part of the building block (see Figures 5.16, 5.17 and 5.20). In this area, local residents also place private elements near the borders, however, less and less vulnerable elements (only a few benches which are chained to the wall). This suggests that a lack of traffic makes a place more susceptible for spatial self-determination in the form of self-structuring semi-permanent structures and elements. The sense of ownership and safety of Houthoek, is probably strengthened by the fact that a high number of parcels border directly to the space in question (see Figure 5.19), increasing social control and making that residents perceive the space as an extension to their private homes (see Figure 5.21). Last, several trees give character to the place and buffer weather extremes (see Figures 5.18 and 5.21).
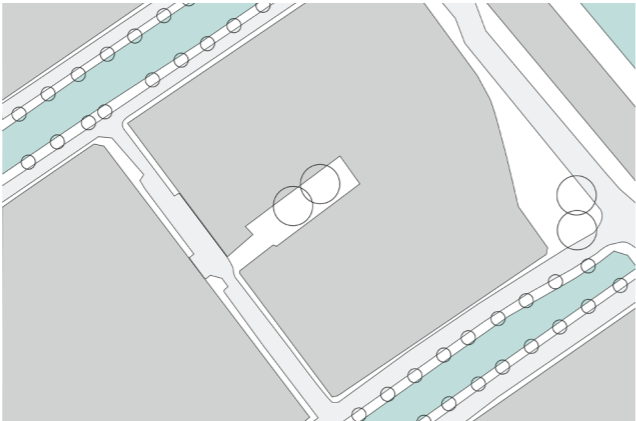
Figure 5.16, surrounding and adjacent buildingblock
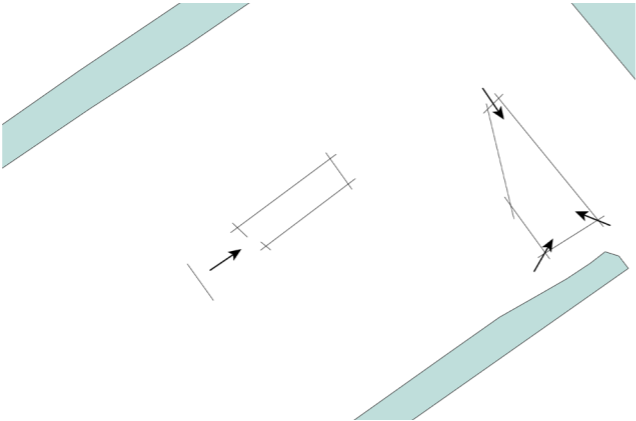
Figure 5.17, enclosing and open borders and different entrance types
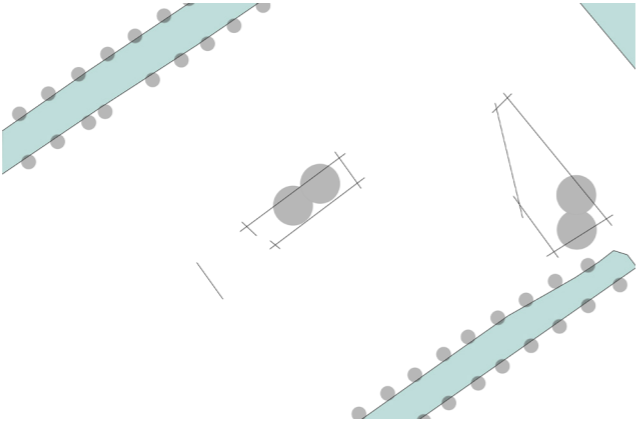
Figure 5.18, trees marking a place and providing shade
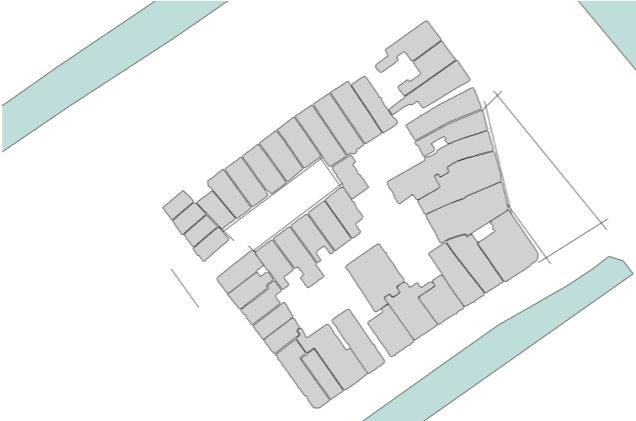
Figure 5.19, multiple private lots adjacent to the areas

Figure 5.20, aerial photo of the Houthoek. Based on imagery from ArcGis, 2020

Figure 5.21, private semi-permanent stuctures are placed, showing a high sense of ownership and spatial self-determination of this place

5.3 COURTYARDS AND STREETS |

Schuttersveld, Delft

The Schuttersveld is a courtyard in the historic center of Delft (see Figures 5.22, 5.26 and 5.27). This space provides room for a combination two types of spatial self-determination (see Figure 5.27).

First of all, local residents place semi-permanent structures along the borders in the form of furniture and plant pots, thereby self-structuring the space (see Figure 5.27).

Secondly, the place also provides space for different types of use including listening to (small) concerts, playing, reading and strolling (see Figure 5.27). The courtyard has only two entrances of which only the North East entrance is public (see Figure 5.23). This makes that only few 'outsiders' come here and that no regular traffic passes by creating a save environment to place privately owned materials in the courtyard. Next to this, as with Houthoek, a high number of private parcels lay around the courtyard, creating a sense of social control and making that the courtyard can be perceived as an extension of the private parcel. The large trees and growing frames along the borders create diversity and give character to the place. Next to this, the large trees also border the space vertically by providing some sort of roof, thereby making that the space almost feels as big room (see Figures 5.24 and 5.27). Different pavement types create depth to the space and create light 'borders' that can be passed by moving through the space. Last, elements such as benches and playing equipment (in the preceding courtyard (see Figure 5.22), enable and stimulate different uses of the courtyard, thereby enhancing spatial self-determination.
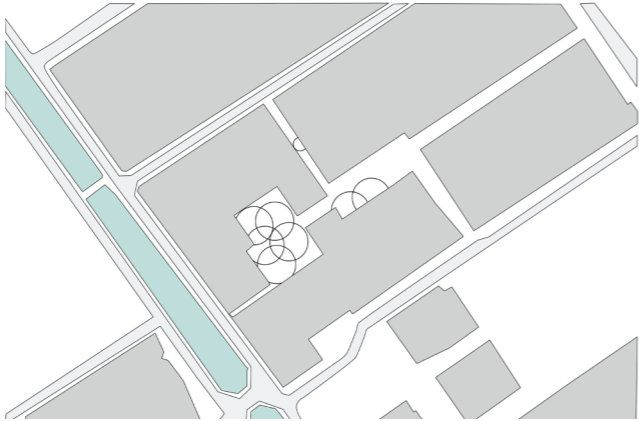
Figure 5.22, enclosing buildingblock, area covered by tree canopy
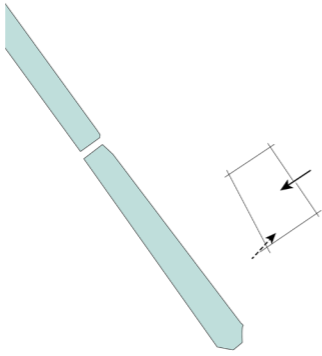
Figure 5.23, enclosing borders and hidden entrances of which one public
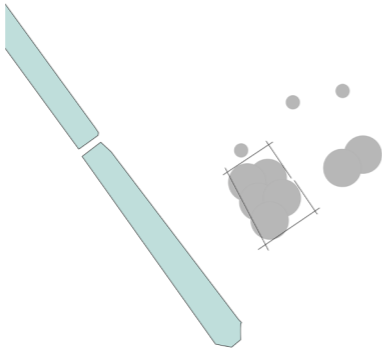
Figure 5.24, thick tree canopy creates almost a roof over the courtyard
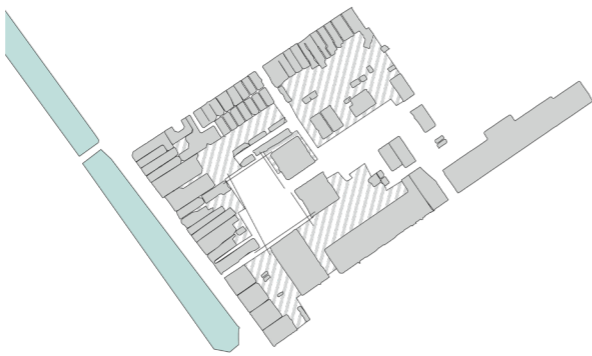
Figure 5.25, high number of parcels lay adjacent to the courtyard and private space (gardens) lay in in between

Figure 5.26, aerial photo of the Schuttersveld. Based on imagery from ArcGis, 2020

Figure 5.27, the courtyard provides space for spatial self-determination by resident placing semi-permanent elements and using the square in different unpredictable ways

Conclusion

Several similarities of both analyzed spaces. First of all, both areas form a dead-end for 'outsiders'. This strongly reducing traffic which creates safety and space to place private elements along the borders. Alexander (1977) confirms that a minimum of traffic is needed to form more private places. He suggests this should be done by "Paths remote from services, narrow and twisting, to discourage through traffic, with many at right angles and dead ends." (Alexander, 1977, p. 194). Both analyzed spaces also have trees that mark the place provide a vertical border and mitigate the climate. This is also acknowledged by Alexander (1977, p. 799) who states that trees create a "room" and make a place. As with the squares, characteristic borders, created by for instance installing growing frames or introducing buildings of different styles and in a staggered order, create extra character and diversity. This makes a place where people are willing to reside instead of just a dead spot thereby enhancing different uses which, in turn, fosters spatial self-determination (Witman & De Haan, 2010). Also locating private parcels directly to the place in question, enhances social security and makes that people make the place their own by spatially self-determining how the space should look like. Last, as with the squares, different pavement types create space (Moughtin, 2003) and different attributes enable and stimulate different uses of a street or courtyard, thereby enhancing spatial self-determination.

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps

Analyzing Spatial Elements

Lanxmeer, Culemborg

The communal gardens of Lanxmeer in Culemborg (see Figures 5.28, 5.32 and 5.33) are famous for their ecological building style. The gardens also show a high degree of spatial self-determination since people make use of the gardens in different ways (e.g. sitting, playing, eating, reading) and because they maintain and structure the private and communal gardens themselves (Eva-Lanxmeer, n.d.). This use of the area is enabled creating the feeling of an enclosed area with only several public entrances which all lead to the same place (see Figures 5.28 and 5.29). The communal gardens are enclosed by housing and occasionally private gardens in between that form a private-public transition zone (see Figures 5.28 and 5.31). In this way there is a form of social security and sense of communal ownership, since residents can directly access the communal garden and have a direct view on them from their homes/gardens. The gardens themselves are designed in a way that people can make rounds, thereby enabling different uses. Besides, they are designed in such a way that there is a sense of depth by placing plants and trees in certain positions (see Figures 5.30 and 5.33). This creates different sub-places and makes the garden as whole more interesting to reside, thereby enhancing different uses. Last, the gardens also form a transition zone between home and the orchard South East of the blocks, thereby underscoring different 'levels' of publicness (see Figures 5.28 and 5.32).

Figure 5.28, by buildings enclosed green
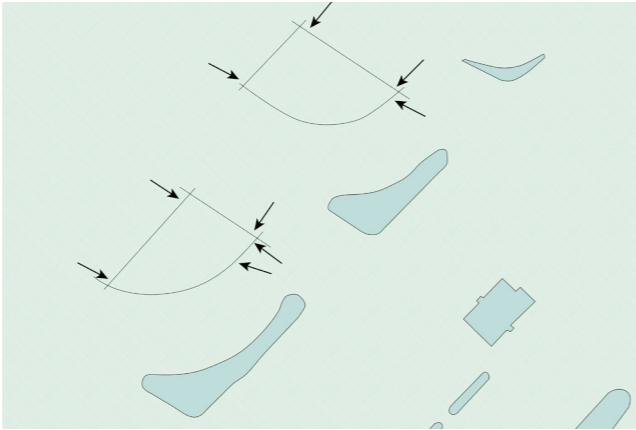
Figure 5.29, enclosing borders and different entrances leading to one place

Figure 5.30, different trees creating variety and depth

Figure 5.31, high number of parcels lay adjacent to the courtyard private-public transition area (gardens) lay in between

Figure 5.32, aerial photo of the Communal gardens at Lanxmeer. Based on imagery from ArcGis, 2020

Figure 5.33, different depths in a garden enclosed by buildings, Lanxmeer. From "*Common.Wikimedia*", by Lamiot, n.d.

Domiz I, Duhok

The communal gardens in Domiz I Refugee Camp in Duhok (Iraq), are chosen based on the fact that camp inhabitants are given the possibility to self-maintain the gardens and decide themselves what plants to select and how to use them (Lemontreetrust, 2021). As can be seen on the map and aerial photo (see Figures 5.34 and 5.35), the gardens are located right in the middle of the community-blocks, thereby making them easily accessible and creating social security. This also enables more vulnerable groups, such as women and children, to use the gardens. Although the gardens are designed to fit in the camp-grid (see Figure 5.34), they still stick out a bit into the passing road, thereby making them clearly visible to passers-by. The gardens themselves are provided with different amenities that enable different possibilities, such as glasshouses, different plant beds and storage space (see Figure 5.36). Last, management of the gardens is specifically aimed at involving vulnerable groups in the project, for instance by introducing women participation program and including educational aspects (Lemontreetrust, 2021).

Conclusion

Several elements come forward when analyzing both relatively different cases. First of all, they are both located in relatively enclosed areas surrounded by peoples houses that also provide a sense of (social) safety and ownership. The need for enclosing or sometimes even with walls, is also elaborated upon by Alexander (1977), who states that this is needed to create a quiet restful place. Next to this, they are designed in such a way that they can be easily accessed from different sides and different degrees of 'privateness'. Last, both programs and the construction of certain amenities, including greenhouses and storage spaces, make that the garden can be used to its full extend and that many different activities can be employed, thereby enhancing spatial self-determination.

Figure 5.35, aerial photo of the Communal gardens at Domiz I, Duhok (Iraq). Based on imagery from ArcGis, 2020
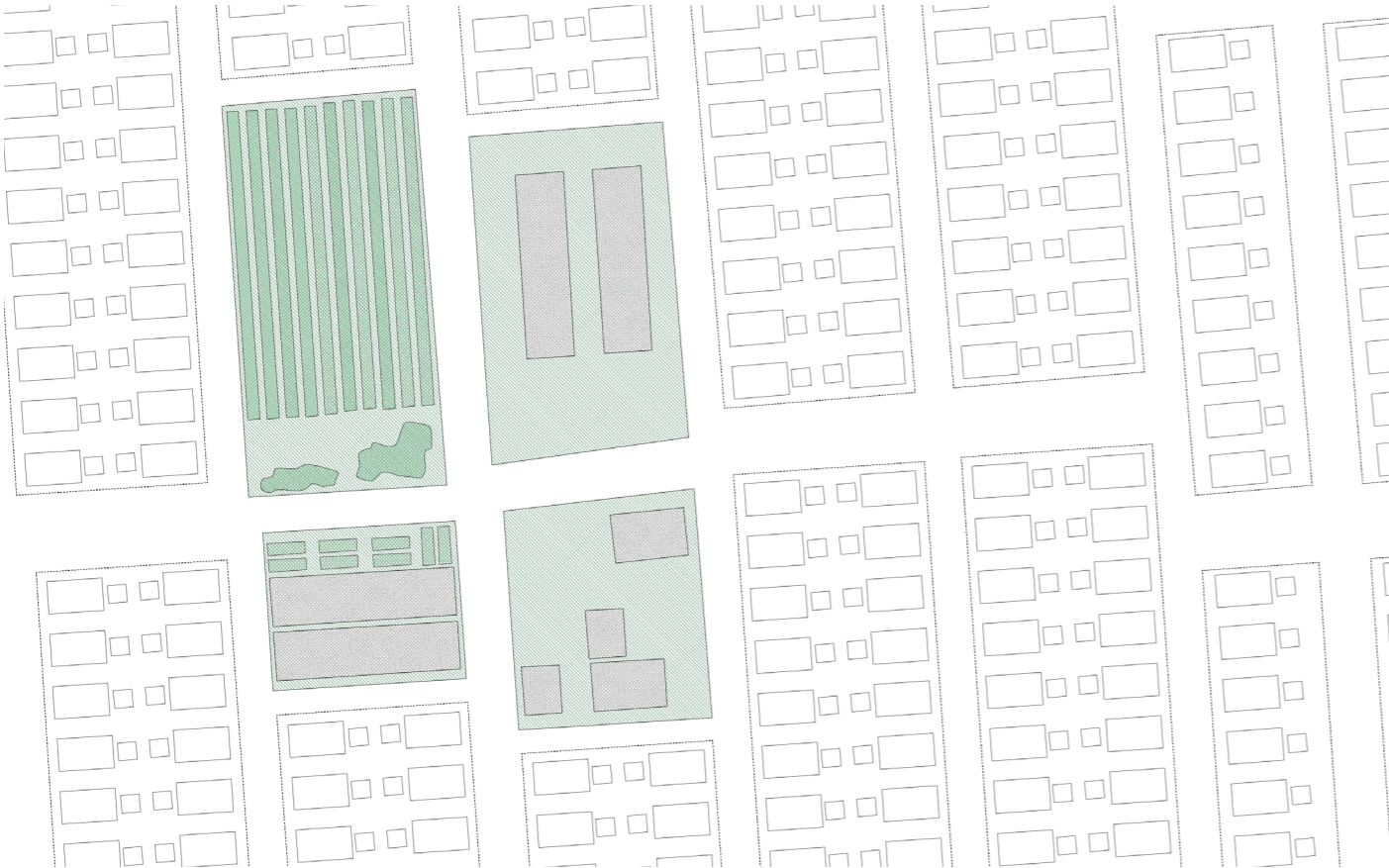
Figure 5.34, the communal gardens fit in the grid and are surrounded by community-blocks

Figure 5.36, communal gardens in Domiz I Refugee Camp. From "*OurstoSave*", by B.W Dyer, 2021.

Kashan Bazaar, Iran

The bazaar of Kashan is a relatively compact inside oriented covered market that is surrounded by a highly densified building block (see Figure 5.41). For many years, it has been (and still is) a center for economic activity. Therefore, it is included in this analysis. The complex consists of several 'covered streets' that are positioned perpendicular to one another (see Figure 5.37). Together with the multiple entrances, this generates different routes that can be taken through the complex. Among these pathways, there are also several routes that end in a hall, thereby leading the visitor to a completely different kind of space. These halls often have a higher ceiling than the 'covered streets' thereby creating a sense of a different centralized space. Together with different lengths of lines of sight, this creates certain sequences of spaces that present themselves to the visitor, thereby making the complex more interesting to visit (see Figures 5.39 and 5.40). Next to these spatial elements, the bazaar also houses a high number of (work)shops that are located next to each other (see Figure 5.38). Besides being the main reason for most people to visit the bazaar, these (work)shops also create a greatly varying sequence of stalled out goods that cause surprises and create interesting moments when walking through the bazaar. As can be seen in Figure 5.42, there are different gradients of publicness in the bazaar. The shops can be considered as private property, although anyone can enter, while the 'covered streets' are fully public. This difference is bridged by a semi-public transition area where goods are displayed (see Figure 5.42). Besides enhancing economic activity, since this form of displaying is also a form of advertisement, these areas also show a certain degree of spatial self-determination of the (work-)shop owners, since they structure this display themselves.
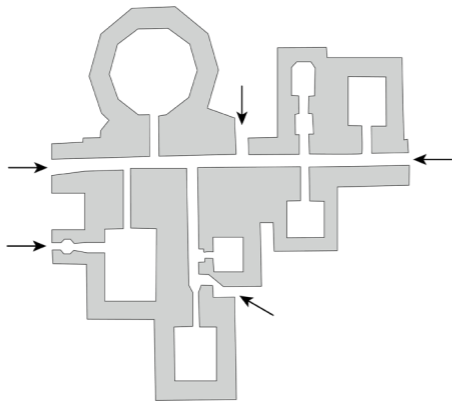
Figure 5.37, buildingmass and entrances
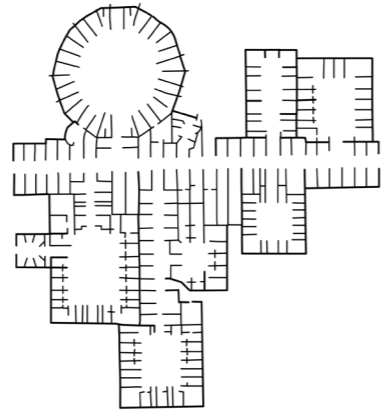
Figure 5.38, (work-)shop layout
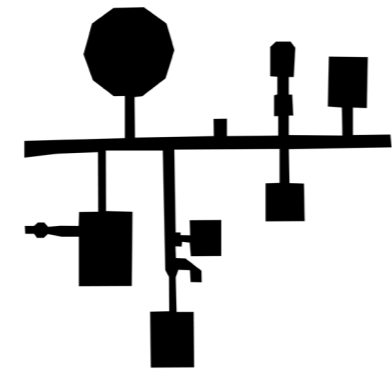
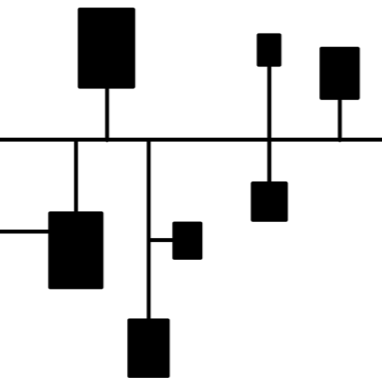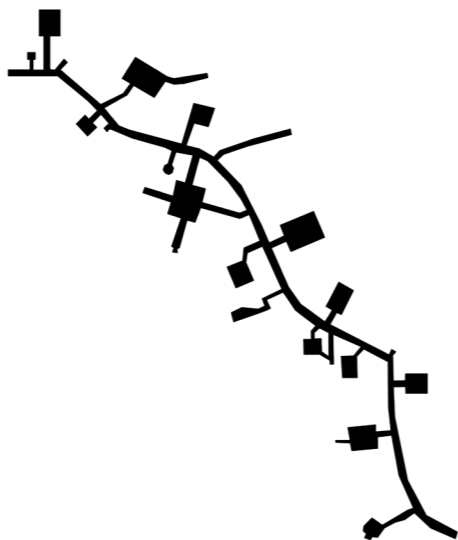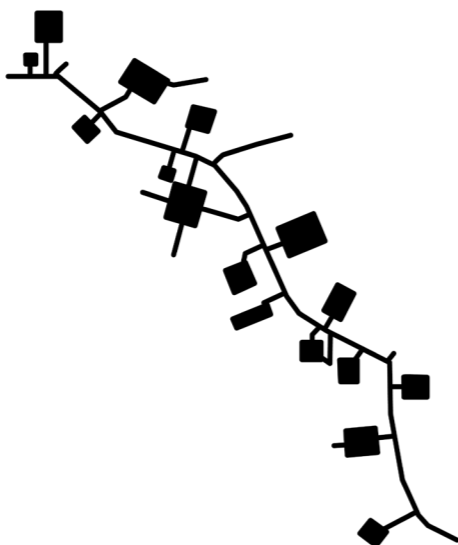**Figure 5.39,** public space and spatial structure

Figure 5.40, concept public space and spatial structure

Figure 5.41, aerial photo of the main bazaar in Kashan, Iran. Based on imagery from ArcGis, 2020

private

private

semi-public

public

semi-public

Figure 5.42, ancient and popular bazaar in Kashan. Gradual transition from private to public, by spatial self-determination of (work)shop owners

5.5 COVERED MARKETS OR BAZAARS |

Isfahan Bazaar, Iran

The main Bazaar in Isfahan (see Figures 5.43 to 5.46), has a relatively similar structure to that of Kashan. First of all, it has the same set up with 'covered streets' of which some lead to bigger 'market-halls' which form a space on itself (see Figure 5.47). Next to this, it has the same structure regarding the (work-)shop layout: (work-)shops along the sides of all spaces where goods are placed just outside the shop, delineating the route and forming a transition zone from 'private' to public. However, besides these similarities, there are also some differences. First of all, the bazaar in Isfahan has a much more elongated shape that flexes its way through a highly densified urban environment (see Figures 5.44 and 5.45). Secondly, the bazaar has one main route to which most other routes and halls are connected (see Figures 5.44 and 5.45). This route also seems to be formed more organically with several curves and bends (see Figures 5.43 to 5.45). This contrasts to the bazaar of Kashan where most routes run either parallel or perpendicular to each other.
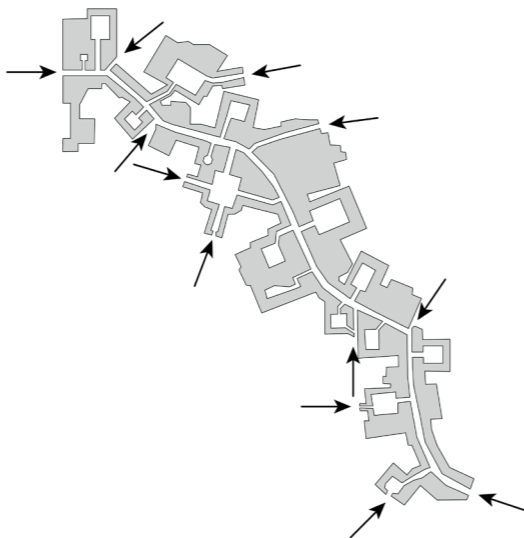
Figure 5.43, buildingmass and entrances

Figure 5.44, public space and spatial structure

Figure 5.45, concept public space and spatial structure

ISFAHAN BAZAAR, IRAN

Figure 5.46, aerial photo of the main bazaar in Isfahan, Iran. Based on imagery from ArcGis, 2020

Figure 5.47, dead ends and different spaces in the bazaar of Kashan

Brixton Market, London

This covered market is located in a completely different setting than both bazaars analyzed above (see Figure 5.50). However, several elements are the same. Although the market does not has a structure of routes of which some lead to big open spaces, the structure of (work-)shops along the routes is the same (see Figures 5.48, 5.49 and 5.51). Also in this market, a semi-public transition zone with goods is located between the more 'private' (though open for visitors) (work-) shops and the public routes. Besides this, like the two bazaars, Brixton Market also has a structure which provides different lines of sight with also different lengths, thereby creating different senses of space and enabling a sequence of spaces to pass by when walking through the market.

Conclusion

Except for the structure of multiple routes ending in big dead-end halls, there are several similarities between the three analyzed projects. First of all, a routing with different viewpoints and different lengths of lines of sight resulting in a sense of different spaces succeeding each other while moving through are found in all projects. This makes a space more interesting and surprising thereby increasing the number of visitors and the amount of time they spent inside (Alexander, 1977; Moughtin, 2003). This in turn enhances economic activity. The different walking ways ans entrances also create different routes and angles of approach that can be walked, also making a complex more surprising and interesting. Next to this, all projects have a semi-public zone between shop and walking path were goods are displayed. This is a form of advertisement, thereby increasing economic activity and spatial self-determination of the shop owners, since they structure the display themselves. Especially in the Iranian bazaars, height differences between the 'covered streets' and the halls create different areas within the bazaar that has their own character. Last, all bazaars are covered by roofs to protect from the local climate (respectively sun and heat and rain and cold). However, all roofs have roof lights in them that let day-light in, making residing inside more pleasant.
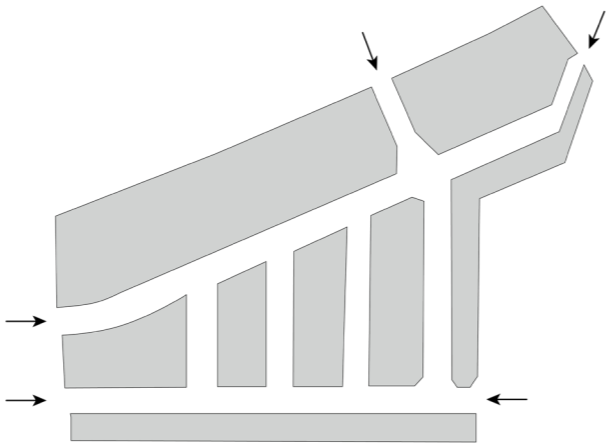

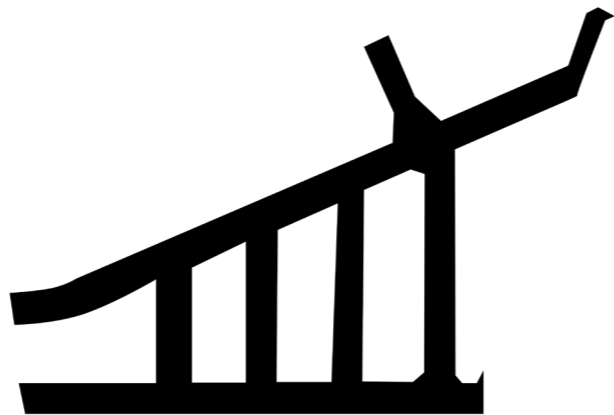**Figure 5.48,** by buildingmass and entrances

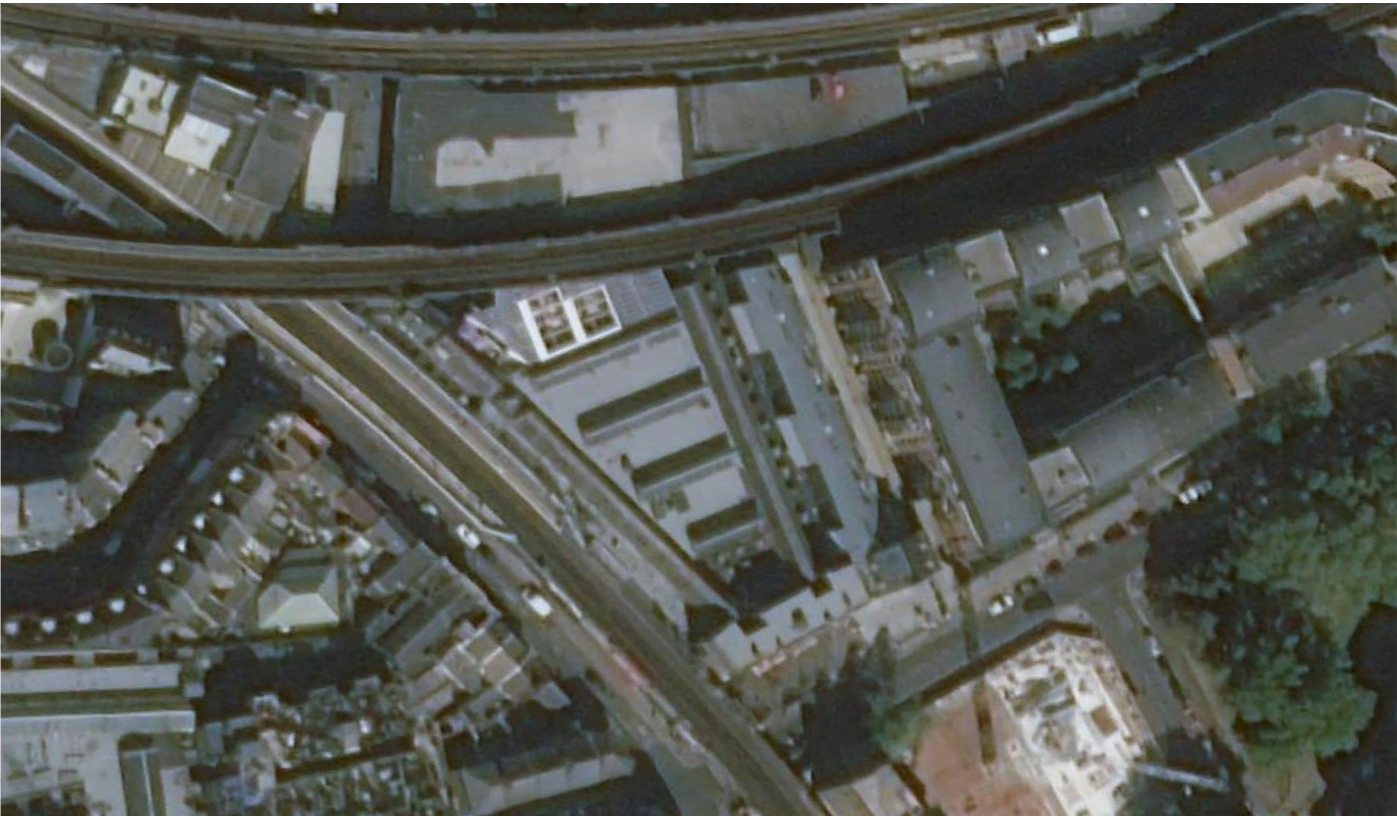**Figure 5.49,** public space and spatial structure

Figure 5.50, aerial photo of Brixton Market, London. Based on imagery from ArcGis, 2020

Figure 5.51, ancient and popular bazaar in Kashan. Gradual transition from private to public, by spatial self-determination of (work)shop owners. Underlayer from "*SouthLondonClub*", by unknown, n.d.

6

PART 3 | DESIGN AND ASSESSMENT

DESIGN EXPLORATION
6.1 flow-related interventions
6.2 spatial interventions
6.3 interfaces and mutual integration
6.4 future scenarios

DESIGN EXPLORATION

In order to enhance (informal) economic activity and spatial self-determination, several modular implementations are proposed, which can be roughly divided under two main perspectives. The first perspective is about flow-related interventions in a refugee camp setting. This perspective is mostly about enhancing (informal) economic activity by providing day-labor jobs relating to the metabolism of an UNHCR planned refugee camp (e.g. providing drinking water and electricity and processing waste). The second perspective is about spatial interventions on four different scales (shelter-, community-, sector- and settlement-level) that enhance both (informal) economic activity and spatial self-determination. The first part of this chapter elaborates on the 'flow-perspective' and how those interventions are implemented throughout the three main phases the UNHCR uses in the context of refugee camps. The second part will focus on 'spatially oriented' interventions, and how they are implemented along the different scales and phases. The third part of this chapter will discuss interfaces between both perspectives and how they are integrated in one another. In this section, also a general timeline and a matrix including all interventions are included. The fourth and last part is about possible future scenarios. These were always kept in mind during the design phase, however, as illustration, it is shown how one intervention would fit in all scenarios.

6.1 flow-related interventions

In the context of a UNHCR planned refugee camp, there are multiple context specific factors that influence economic activity, such as legal constraints by the host country or remoteness of the camp (Turner, 2016; Allousha, Taylora, Guptaa, Rojas Valdesa and Gonzalez-Estradab, 2017). Besides this, the need for a temporal character along with common space constraints, sincerely restrain spatial interventions that foster spatial self-determination and (informal) economic activity. This, since most of these interventions would need more space and/or would result in more permanent structures or set-ups. In order to counter this stalemate, special attention is given to flows generated by the camp inhabitants, who always consume and produce resources and waste when living at a certain standard, regardless of the size of a camp or the context or climate in which a camp is situated. So, since activities with regards to these flows are always present, interventions that include and alter these activities to enhance (informal) economic activity will be made. The main

resource and waste related flows that will be handled include: electricity, cooking fuel, water, sewage sludge and solid waste. Flows about food and goods are not included, since these strongly differ per situation and are therefore harder to quantify. According to Interviewee 7, Wilko Koning, there is often no legal basis for NGO's or supranational organizations such as the UNHCR to employ refugees in wage labor. However, according to Koning, it is often possible to create day labor jobs, in other words, to pay people per service instead of per hour. Therefore, all jobs that are discussed in this chapter will be defined in services that need to be completed.

However, as discussed in Chapter 4 on current practices, the WASH catalogue of the UNHCR (2020) uses three phases to describe different stages of a refugee camp and corresponding levels of assistance. Theses phases are (UNHCR, 2020, p.4): the Emergency Phase (the first six months after the establishment of a refugee camp), the Transition Phase (from six months

to two years after the establishment of a refugee camp) and the Post Emergency Phase (from two years to formally twenty years after the establishment of a refugee camp) (UNHCR, 2020). In the following three sub-sections, the evolution of the flow-related interventions through these phases will be discussed. In each sub-section, general principles regarding the flow-related inteventions will be discussed first.

Hereafter, these will be illustrated by implementing them in Qushtapa Refugee camp (North Iraq) (see section 4.4 and Figure 6.1). To create a maximum of activity in the camp itself, to reduce cost (UNHCR, 2021) and for environmental reasons, as many flows as possible are either generated or processed in the camp itself, finally resulting in a circular system where outside networks only function as buffering mechanisms or as a supplier or processor of side-streams. The leading principles which are leading in determining what interventions are planned and when, relate to the so-called 'Nieuwe Stappenstrategie' (Yanovshtchinsky, Huijbers, and Van den Dobbelsteen, 2013). This strategy literally translates to 'New Steps-strategy' and is about energy (Yanovshtchinsky, Huijbers, and Van den Dobbelsteen, 2013). In this project however, the concept is broadened to include different streams (e.g., water and sewage) as well. The strategy, which is based on the 'Trias Energetica' and the 'Cradle to Cradle'-concept (McDonough & Braungart, 2002), boils down to three main steps which are: reduce demand, re-use rest-streams and solve remaining demands in a sustainable way (Yanovshtchinsky, Huijbers, and Van den Dobbelsteen, 2013). Yanovshtchinsky, Huijbers and Van den Dobbelsteen (2013) add to the third step the phrase 'waste = food', meaning that remaining waste should be used to a maximum extend as a useful product for the context in

which this cycle takes place. Besides generating activity, implementing such a strategy will enhance environmental awareness of camp-inhabitants, reduce pressure on the direct surroundings of a camp and reduce a camps impact regarding climate change.
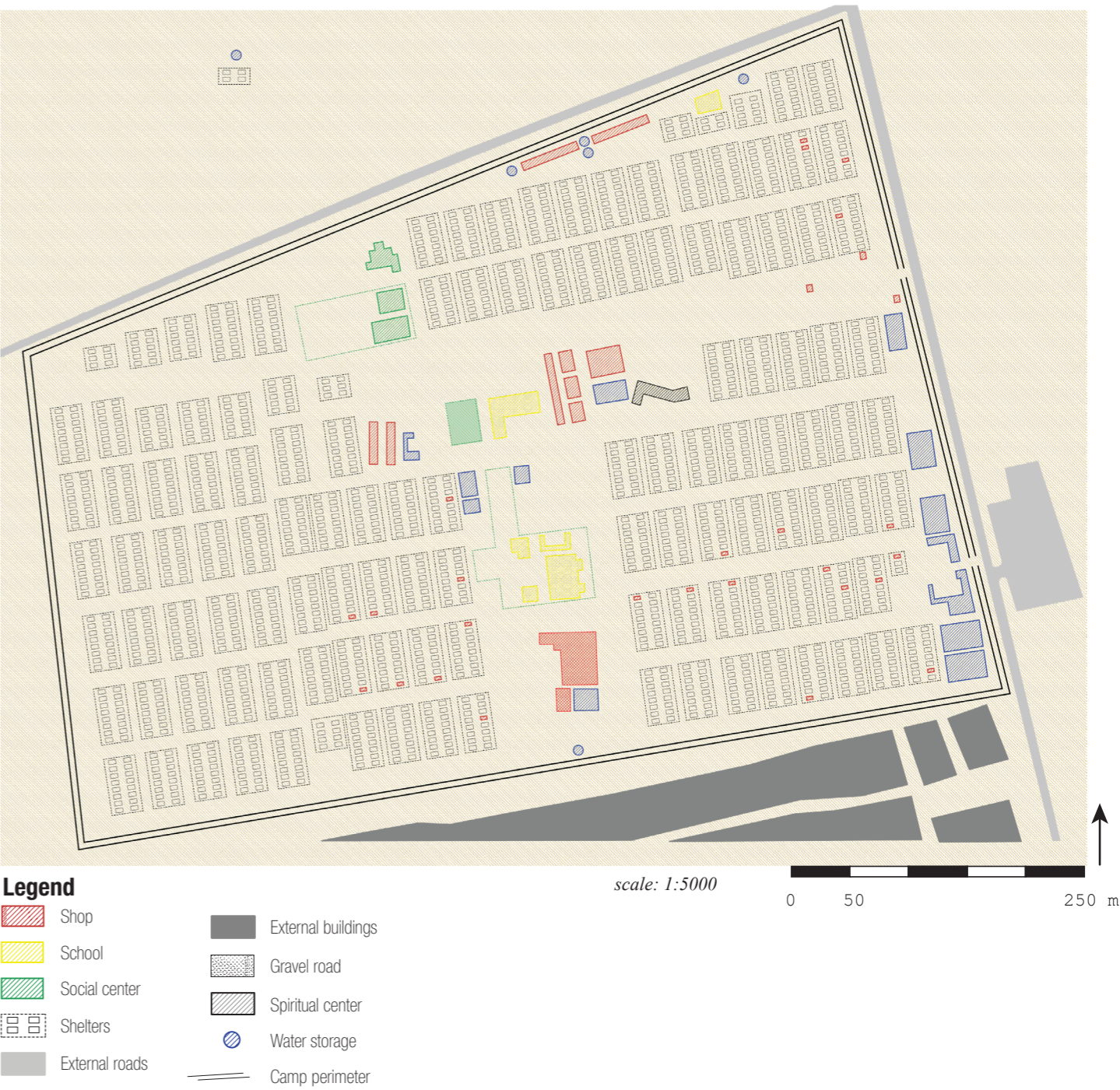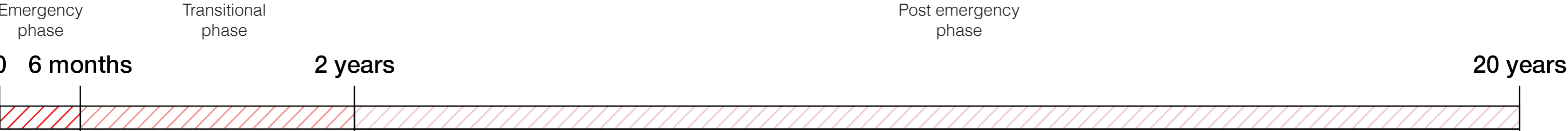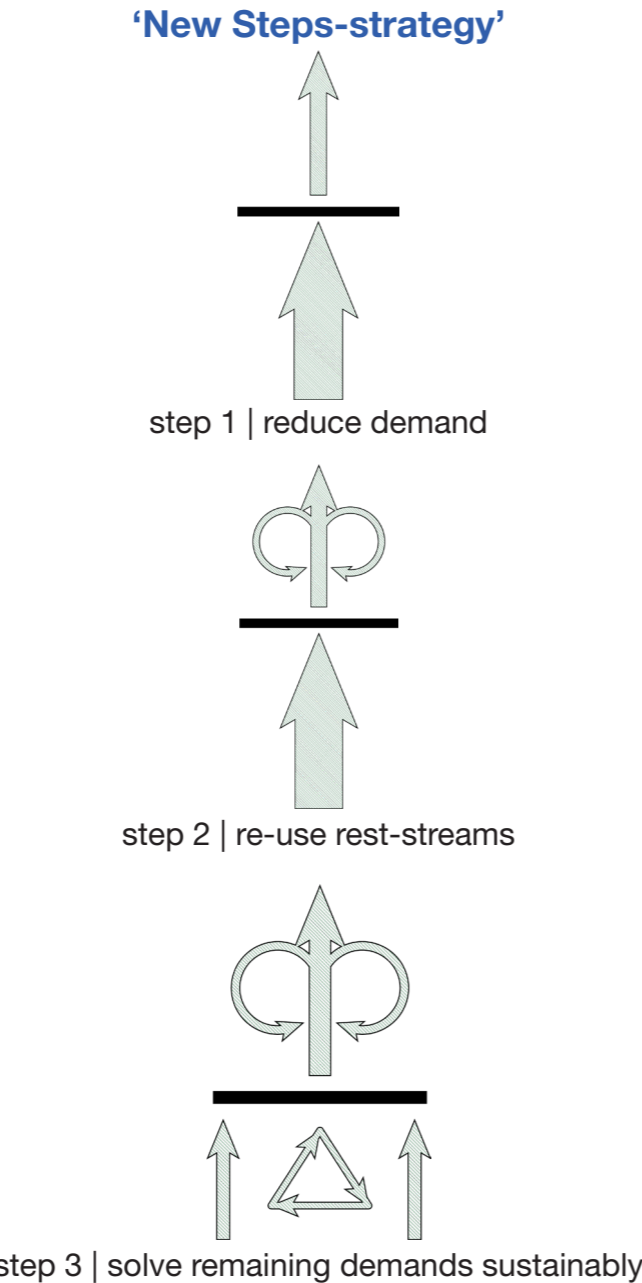
'New Steps-strategy'

step 1 | reduce demand

step 2 | re-use rest-streams

step 3 | solve remaining demands sustainably

Figure 6.1, base map of Qushtapa Refugee Camp, Iraq

Legend
- Shop
- School
- Social center
- Shelters
- External roads
- External buildings
- Gravel road
- Spiritual center
- Water storage
- Camp perimeter

scale: 1:5000

0   50   250 m

Emergency phase

Transitional phase

Post emergency phase

0   6 months   2 years   20 years

Flow-related inteventions in the Emergency Phase

During the Emergency Phase of a refugee camp, the main focus lays on proving the first needs (providing water, food, shelter and safety) (UNHCR, 2020). Regarding the main camp-flows, this is about providing and processing essential flows in any way possible. This means that enough water and cooking fuel has to be provided while at the same time, solid waste and sewage sludge have to be processed in a safe way. Any (informal) economic activity in this phase is welcome, but does not form the main focus point. At the end of this section, a table is presented where all work provision is summarized (see Figure 6.10).

Water

With regard to drinking water, about 276 m³ per day or 8410 m³ per month of water is needed in a camp that has the size of Qushtapa (7900 inhabitants (UNHCR, 2018)). These numbers are based on an average of 35 L/p/day of drinking water (which is fifteen litres more than the official UNHCR requirement in a Post Emergency phase let alone an Emergency Phase

(15 L/p/day) that is used in Al Zaatari refugee camp (Yordan) (Van der Helm, Bhai, Coloni, Koning, and De Bakker, 2017). This water can be either brought in by water trucks, supplied by a local net or pumped up from the ground (see Figure 6.2). Based on a paper by Seeyan (2020) about the Qushtapa groundwater table, it is assumed that in Qushtapa refugee camp, water is pumped up and further distributed through water points (for example of a water pump station, see Figure 6.3) (one per 80 inhabitants, or one community (Emergency Phase standards) (UNHCR, 2020)).

Based on the work of the WHO (2004), Cronin, Shrestha, Cornier, Abdalla, Ezard and Aramburu (2008) and Foekema & Van Thiel (2011), it is assumed that for a camp the size of Qushtapa, about 14.5% (40 m³/day) of the total water amount is used for cooking and drinking, 42.9% (118 m³/day) is used for washing dishes and clothes, 35.5% (98 m³/day) is used for bathing and 7.1 % (19 m³/day) is used for other purposes. Based on the Sphere standards elaborated upon in the WASH-manual (UNHCR, 2020), especially in the Emergency Phase, most grey

water is infiltrated in the ground, using a gravel filled pit. Based on the WASH manual (UNHCR, 2020), about 0.78 m² of gravel infiltration is needed per shower pit. This means that based on the fact that four showers and bathrooms are combined in one building, laying on the crosspoint of four parcels (see Figure 6.5), about 3.1 m² of infiltration area is needed (see Figure 6.4).

Installing the water pumps and basic distribution network is most likely expert work for which special equipment is needed. Therefore, not much installation work can be outsourced to refugees. However, regarding the digging of the infiltration pits, about 196 1 person 8 hour working days (1 p, 8h WD) are needed for the whole camp based on the assumption that it takes one day for one person to excavate and fill two pits ((98 communities x 4 pits x 0.5 days). The overall maintenance and supervision of the distribution network is marginal (perhaps a day job for 2 or 3 people).
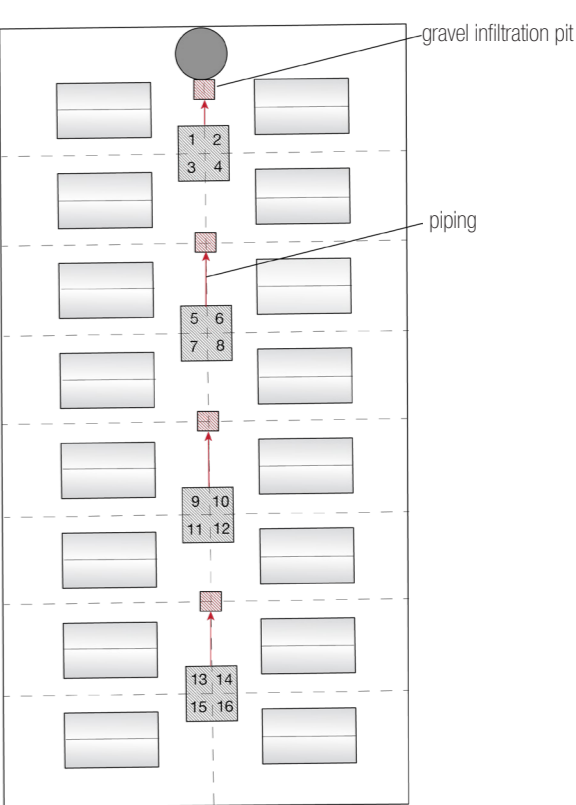

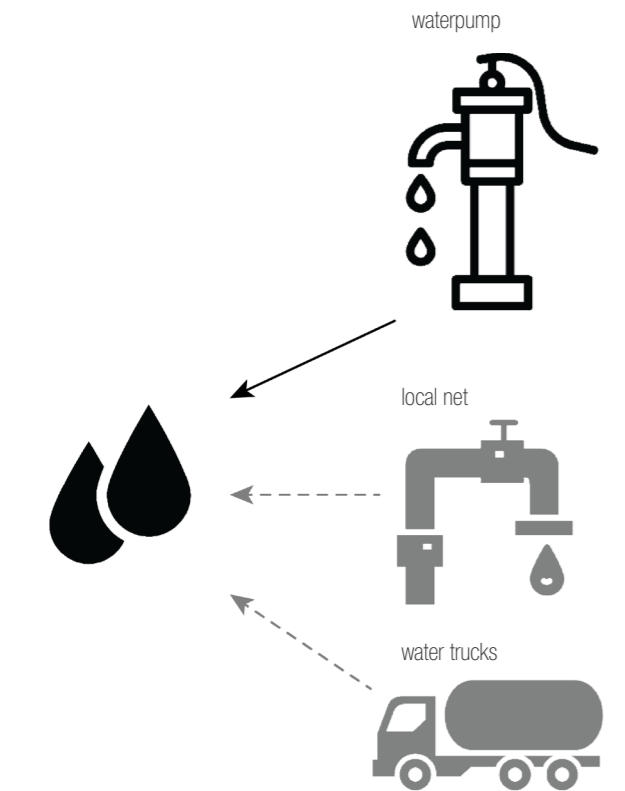**Figure 6.4,** location of grey waterinfiltration pit in a community-block

Figure 6.2, three methods of providing drinking water, it is assumed that waterpumps are used in Qushtapa

Figure 6.3, example of a water pump station at Zaatari Refugee Camp, Jordan source: From "*HAE"*, by unknown author, 2015

Figure 6.5, square shower and bathroom buildings divided in four quadrants in Qushtapa Refugee Camp, Iraq source: From "*Elrha"*, by unknown author, 2021

0   6 months   2 years   20 years

cooking fuel

The second essential flow that has to be provided is fuel or energy to cook on. There are different energy sources available. Tran, Seng To and Bisaga (2020) describe five main types that can be used in refugee camps, these are: biomass, biogas, ethanol, LPG (Liquefied Petroleum Gas) and electric cooking (see Figure 6.6). Although, biomass is the most common type to be used in refugee camps (even in some countries biomass accounts for over 90% of the total household energy consumption (GIZ, 2017)), there are many disadvantages attached (Tran, Seng To and Bisaga, 2020). These include general fire hazards, bad health and environmental consequences (e.g. reduction of biodiversity, soil impoverishment, negative impact on climate change and extensive particulate matter production), low energy density and low efficiency of used stoves (Tran, Seng To and Bisaga, 2020). The last two effects make that for a camp of the size of Qushtapa, around 6077 kg of wood per day would be needed (3.8 kg per household per day) (based on an efficiency rate of 20 % and a cooking energy demand of

3.12 KwH/household/day (Zaatari average) (Tran, Seng To and Bisaga, 2020). Gathering this amount of wood is bad for the environment around the camp, could lead to conflicts with local residents and creates unsafe situations for vulnerable groups (e.g. women and children that gather wood around the camp) (Tran, Seng To and Bisaga, 2020). Therefore the use of biomass is not considered. This leaves biogas, ethanol, LPG and electricity as options. In this phase, biogas is not an option yet, since production facilities are to advanced to set up in this phase and storage of biogas is difficult (due to the molecular structure of Methane gas which is hard to compress or liquify (Tran, Seng To and Bisaga, 2020)). Ethanol could be a viable option, however, introducing ethanol stoves would mean that no other fuel (for instance LPG or biogas) could be used anymore. This would sincerely hinder flexibility and evolvement options. Last, using electricity as energy source gives the same problem and would more than double electricity demand in the next phases making it more expensive and, in some cases, even hard to provide. Besides, this would mean that a
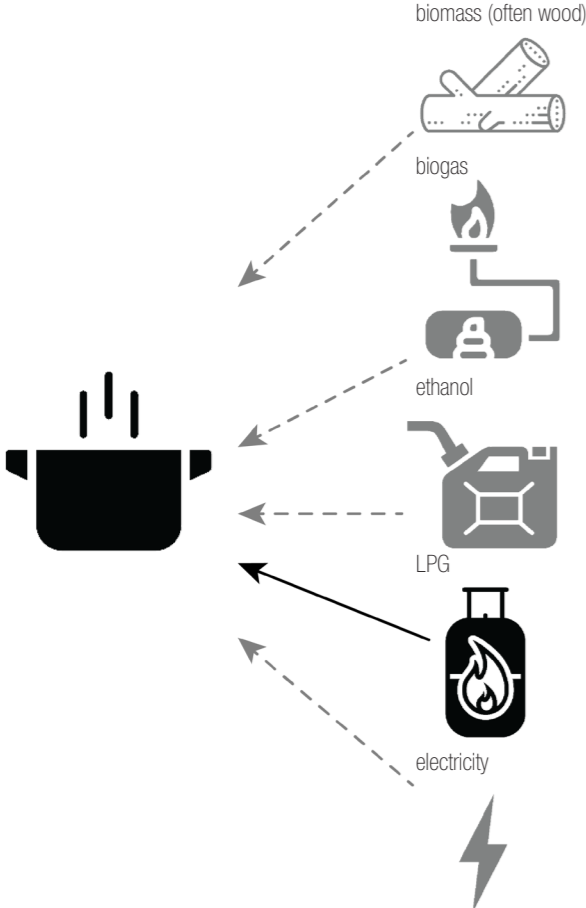
complete electricity net should be constructed which is not realistic in an Emergency Phase. Although it is relatively expensive, this leaves LPG as best option in this case, since the stoves provided to use this fuel can also be used for other gas-type fuels (such as biogas) and because it is a relatively clean and safe fuel type to use (see Figure 6.7) (Tran, Seng To and Bisaga, 2020).

Based on the average cooking energy need (3.12 KwH/household/day (Zaatari average) Tran, Seng To and Bisaga, 2020)) and the energy density of LPG (45.2 Mj/kg (Lee, Oh, Choi, and Kang, 2011) about 872 kg of LPG is needed per day in the camp or 0,5 kg per household per day. Assuming that LPG could be stored per 5 kg, this would mean that every household should be supplied with a tank roughly every ten days. Assuming that a small truck can store 200 of these tanks and that it takes a day to distribute and help installing them, it would mean that approximately 24 1p, 8h WD are needed per month for distribution.

sewage sludge

Besides solid waste, also sewage sludge needs to be removed. In the Emergency Phase, the options for this are either to collect and dry it in drying beds outside of the camp after which it is buried (Eyrard, Girard, and Alome, 2015), to bury it at the location of the latrines and relocate the latrines every time a pit is full or to process it outside of the camp (information based on interviews with Kleinschmidt (interviewee 6) and Wilko Koning (interviewee 7) and UNHCR, 2020). In relatively urbanized contexts, sewage sludge is often processed outside the camp. According to Elrha (2021) this is also the case with most refugee camps in the Erbil region, where also Qushtapa lays. Therefore, it is assumed that in the Emergency Phase, sewage sludge is processed outside the camp by a third party.

Since it is then also collected by specialized trucks (see Figure 6.8), this means that no day-labor jobs for camp inhabitants are created.

biomass (often wood)

biogas

ethanol

LPG

electricity

Figure 6.6, five types of cooking fuel, in this phase, LPG will be used in Qushtapa

Figure 6.7, cooking with LPG in a Rohingya Refugee Camp
source: From "*UNHCR*", by Arnold, R., 2018

Figure 6.8, a vacuum truck such as used for dislodging sceptic tanks in Zaatari Refugee Camp, Yordan
source: From "*JEN*", by unknown author, 2013

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps

Design Exploration

solid waste

Based on the average in Zaatari refugee camp (0.4 kg of solid waste per household per day) (Oxfam International, 2017). This means that for a camp of the size of Qushtapa 632 kg of waste is produced per day, or 19223 kg per month. The most commonly used option for refugee camps is to either burry or burn waste at centralized spots to reduce health hazards (UNHCR, 2020). Although these methods have many disadvantages such as pollution, it appears that there is no viable alternative during the Emergency Phase due to time, resources and capacity constraints. However, by storing the waste at a centralized collection point, it might be recycled in later phase, when structures for this are put in place (see Figure 6.9).

Assuming that waste could be collected weekly by a small truck by using bins that are distributed among all households and one truck can handle the trash of 150 households per day, roughly two trucks should drive each day to cover a part of the camp. This provides for roughly 42 1p, 8h WD per month to collect waste.

Figure 6.9, solid waste is collected and brought to a central collection point during the emergency phase

work provision by the flows

flow		installation	maintainance
water	providing a flow	-	2/3
	processing a flow	196	-
cooking fuel	providing a flow	-	24
	processing a flow	-	-
sewage sludge	providing a flow	-	-
	processing a flow	-	-
solid waste	providing a flow	-	-
	processing a flow	-	42
Total:		196	68/69

Figure 6.10, All flows discussed and the work that they provide (counted in 1 person 8 hour working days) in both the installation (in absolute numbers) and the maintainance phase (workingdays per month) are included

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps

FLOW-DESIGN | PROVIDE ALL FLOWS, RE-USE WASTE STREAMS

PHASE 2 | TRANSITION PHASE

Flow-related interventions in the Transition Phase

In line with the 'New Steps Strategy', the second phase, the Transition Phase, is about re-using waste streams. Next to this, it is decided that all camp-flows are still provided in any way possible. However, besides water and cooking fuel, electricity is added in this phase, since it provides safety (e.g. street lighting), enables people to stay in touch with their relatives, enables life after dark (e.g. light inside shelters) and enables food to be stored more easily (e.g. by using refrigerators). As in the previous section, all numbers regarding work provision are recapitulated in the table in Figure 6.26.

Water

Regarding the generation of drinking water, not much changes and the wells drilled in the previous phase will still be used. Distribution, however, will be improved. Each household will get access to a private water tap by installing a water net across the camp. This is done for three main reasons. First of all, it enhances a sense of normalcy, thereby improving the living-quality of people. Secondly, based on experiences from Wilko Koning (interviewee 7), it is decided that it is more just and viable to install a water net, since communal taps are often (illegally) connected to one or more private shelters, thereby cutting of the water supply to other households which in turn makes distribution

increasingly inefficient and therefore expensive. Last, private (illegal) connections are often connected to a pump, which creates a vacuum on the improvised pipes which, in turn, increases the chance on dirt leaking in through punctures and leaking gaskets (based on information provided by Wilko Koning (interviewee 7)). The net is set up along the east-west axis of the camp (see Figure 6.11). All piping is located on existing routes to create access for maintenance. As can be seen on Figure 6.11, the main pipes are alternately laid down along the (broader) east-west routes. So-called 'sub-piping', which are positioned on the (narrower) north-south routes, connects the shelters to the water net. These 'sub-pipes' are led down on every second or third road, depending on the direct spatial context. In this way a grid is

created of 130m x 90m and of 130m x 60m. These grid sizes are more efficient and will provide more room for potential agricultural and/or urban developments in the future. The size of this grid is based on the structure of the camp, in which the water net has to fit, and is based on a grid size which is known to be efficient and which provides room for different urban developments and therefore spatial self-determination in the future. To function in the current grid of 60m x 25m as well, several temporary pipe-lines are installed, that will lay above the ground. To provide the net with water, water from the wells is pumped in five main water towers of 75 m³ each (see Figures 6.11 and 6.12). These provide pressure on the system.

Legend

Shelters		Water tower
External roads		Main waterpipe
External buildings		Sub-waterpipe
Gravel road		Temporary above ground waterpipe

Figure 6.11, Map of the implementation of a waternet

scale: 1:5000

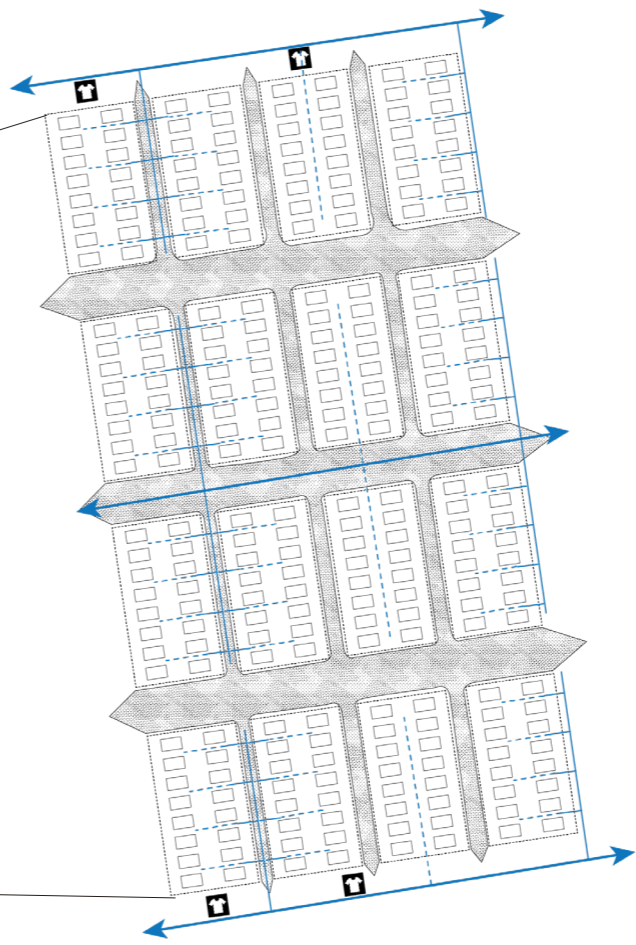0   50   250 m

0   6 months   2 years   20 years

Figure 6.12, UNHCR water tower in Niger
source: From *"UNHCR Niger"*, by unknown author, 2020

The installation of this system is still specialist work for which special equipment is needed, however, some parts (e.g. installing taps in the shelters) could be outsourced to camp inhabitants. Assuming that one person can install four tapes in a day, it can be estimated that about 395 1p, 8h WD are needed.

With regard to the processing of water, grey water consisting of 118 m³/day, used for washing dishes and clothes and 98 m³/day used for bathing will now be stored in tanks of 2 m³ instead of letting it infiltrate. In this way, water, which is relatively scarce, can be saved and further pollution of the ground and groundwater is prevented. This means that the storage tanks have to be emptied every four days. Water from these tanks will then be filtered in a so-called 'containerized WWTP' (Wastewater Treatment Plant) (see Figures 6.13 and 6.14) (Van der Helm, Bhai, Coloni, Koning, and De Bakker, 2017). After cleaning this water will be redistributed to the camp inhabitants to water plants in the communal and public areas (see section 6.2). Any remaining water will be given back to the local community (as happens in Al Zaatari refugee camp, Jordan (information based on an interview with Wilko Koning (interviewee 7)). For a recapitulation of all flows, see Figure 6.15.

To install the system, holes of 1 x 1 x 2 meters have to be dug. To do this, excavators are needed, therefore this work will most likely be outsourced to local contractors.
Camp inhabitants operating the system of both
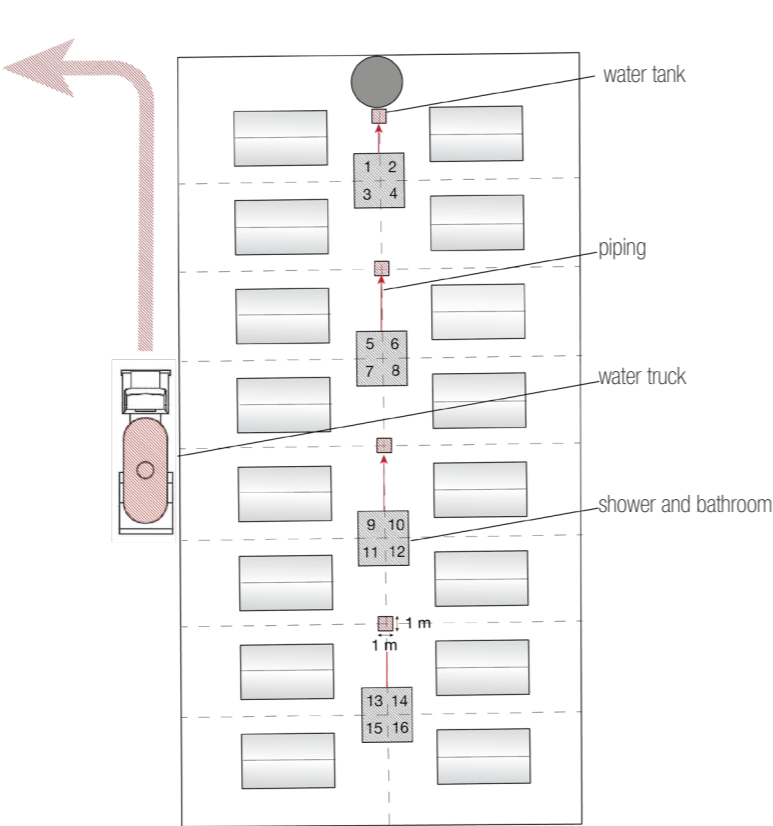
Figure 6. 13, grey water is collected and then brought to a WWTP

Figure 6.14, a containerized WWTP
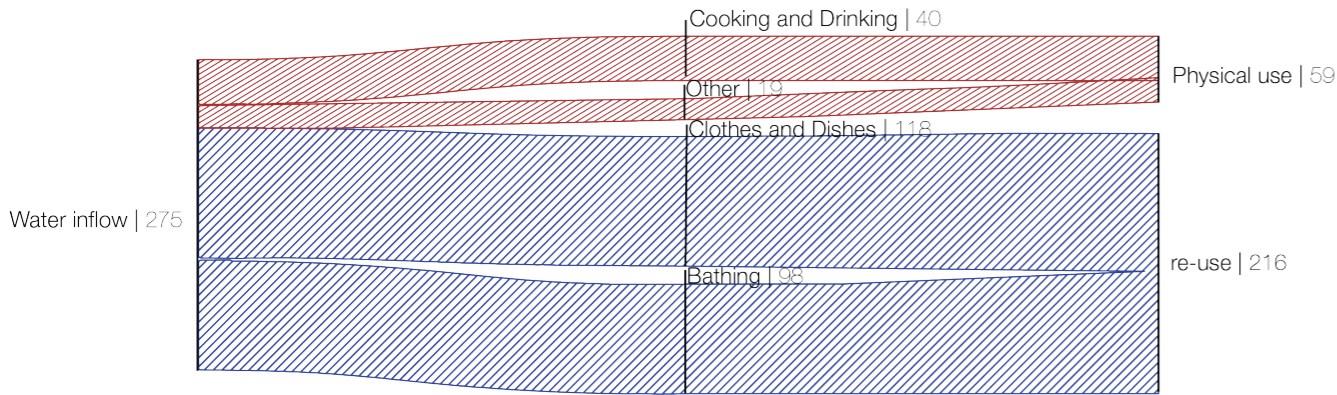source: From *"IndiaMart"*, by unknown author, n.d.

Figure 6.15, water flow-diagram of Qushtapa

collecting and distributing this water, however, may be possible after some education (e.g. learning how to operate a truck). Estimating that a small water-truck is able to collect about 11 m3 of water, means that about four water tanks, can be emptied. Therefore, 98 truck movements are needed every four days. Assuming that a truck can make six rounds in a day and that it is a two man job, roughly 16 x 2=32 1p, 8h WD are needed every four days. This totales to roughly 224 1p, 8h WD per month.

rainwater
Besides using grey water, also rainwater is used to water plants. This water is collected by installing gutters and pipes to the shelters and collecting the water in a 1 m3 water tank in the communal area (see Figure 6.16) (see section 6.2 on Spatial Interventions). Taking into account that in the Erbil region there is an average annual rainfall of 365 mm per year (Weather-Atlas2021) with great changes throughout the year, this system helps to keep plants alive during the driest months.
The construction of this system on a shelter

may take two people 2 hours. Based on this assumption, roughly 790 1p, 8h WD are needed to install this system to all 1580 shelters of Qushtapa.
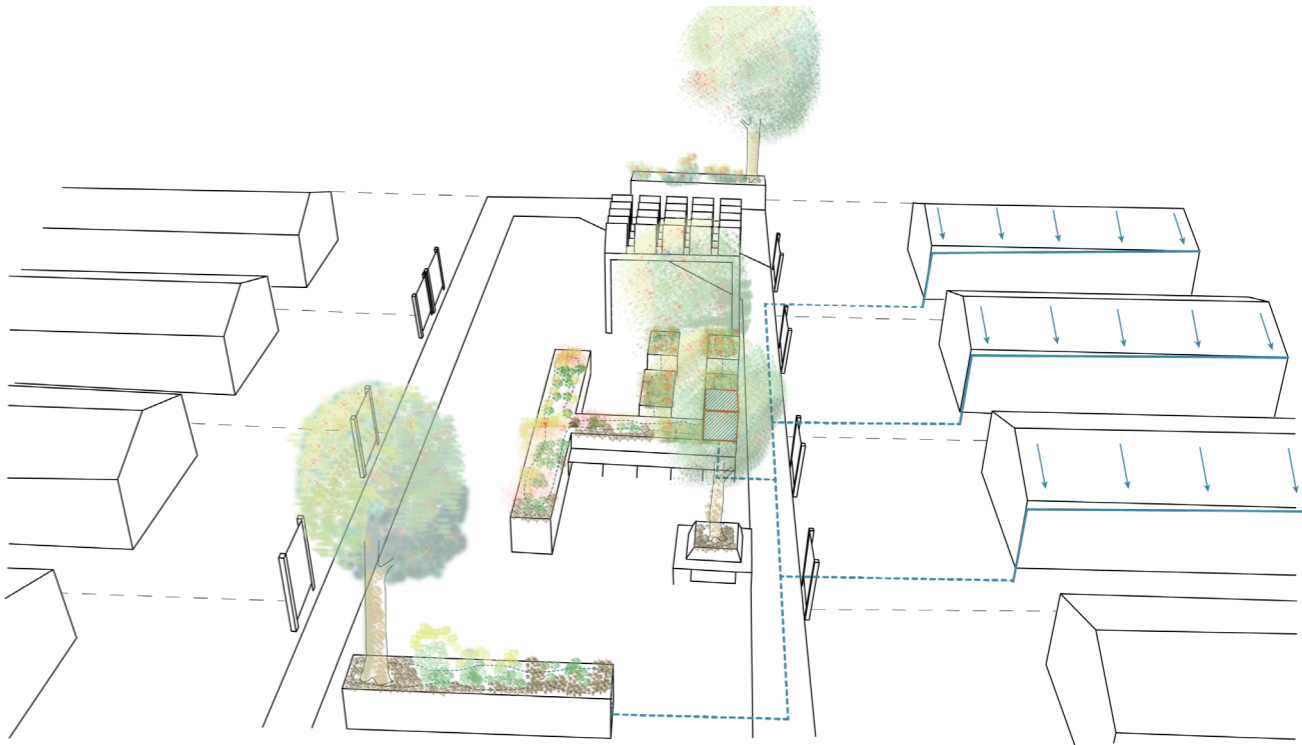

Figure 6.16, rain water is collected from shelter roofs and stored for droughts

electricity

As discussed above, electricity is added to the list of flows that have to be provided to camp-inhabitants in this phase. Based on information derived from the interviews and provided by UNHCR (2018), it comes forward that most camps in an urban environment get their electricity from the local net. This is also the case with Qushtapa refugee camp.

The electricity net to connect each household, will be lead down in the same way as the water net, using the same ditches (see Figures 6.11 and 6.17). As with the installation of the piping of the water net, most cables will be installed under ground. However, some cables that do not fit the grid as explained above and therefore will probably have to be removed in the future, are constructed above ground (see Figure 6.18). This increases efficiency and therefore reduces costs. As with the water piping, most of this work has to be done by local contractors who have the knowledge and equipment. Therefore, no jobs can be sourced out to camp-inhabitants regarding the implementation of the electricity net.

With regards to the maintenance of the net, it might be viable to educate camp inhabitants to do this. This might provide for 10 1p, 8h WD per month.

Figure 6.18, most cables will lay underground besides the water piping, however, some cables that do not fit future scenarios will be constructed above ground as here in Azraq, Jordan. source: From "*UNHCR*", by : R. Arcidiacono, n.d.

Legend

Shelters	Local power net
External roads	Main electra cable
External buildings	Sub-electra cable
Gravel road	Above ground cables

scale: 1:5000

0   50   250 m

Figure 6.17, map of the implementation of an electra net, following the same structure as water net

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps

Design Exploration

cooking fuel and sewage sludge
In the Transition Phase, cooking fuel in the form of biogas will be locally produced by using sewage sludge. The design of this system is based on the work of Eyrard, Girard, and Alome (2015) and works as follows (see Figure 6.19). Each compound of four bathrooms will be connected to one bioreactor. This reactor consists of a sceptic tank that is sealed of from the air (by using siphon and a direct connection to the gasholder). In this tank all sewage sludge is collected and a digestion process will take place. This will result in the production of, primarily, Methane gas. Due to the molecular structure of Methane, this gas is difficult to compress or liquify, posing difficulties for storage (Eyrard, Girard, and Alome, 2015; Tran, Seng To and Bisaga, 2020). Therefore, it has to be pumped in a gasholder. This gasholder consists of a metal cylinder with a cap that can move up and down. When gas is pumped in, the holder will move upwards, thereby imposing its weight on the gas, which in turn provides the pressure on the system. The bottom of the cylinder is placed in a water basin to prevent any leaks. From this gasholder, pipes are laid back to the shelters to provide them with gas. According to Tran, Seng To and Bisaga (2020) this gas does contain a certain amount of Sulphur and water. Therefore stoves have to selected which are resistant to this. Each community block will be provided with its own gasholder, thereby reducing the amount of piping. According to Tran, Seng To and Bisaga (2020), the remaining sewage
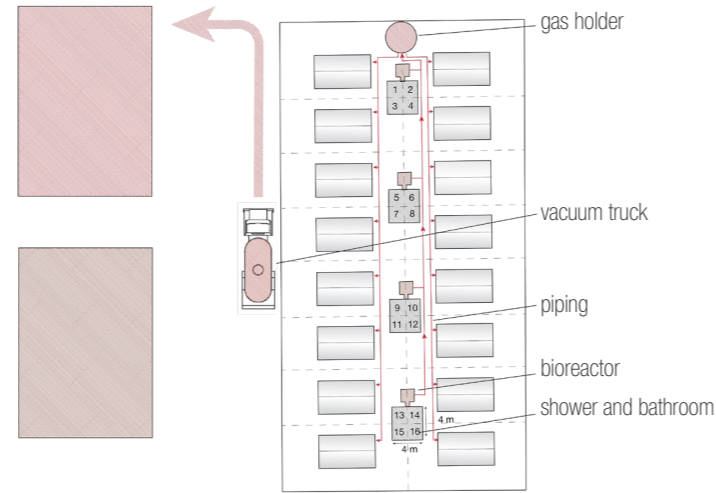
Figure 6.20, bioreactors are dislodged and sewage sludge is brought to drying-beds

sludge in the sceptic tanks should be removed roughly each month, to ensure enough time for the process to take place. This sludge can be removed by using a vacuum truck after which it can be brought to a drying bed on the outside of the camp (see Figures 6.19, 6.20 and 6.21). Here the remaining sludge can dry in the sun (see Figure 6.22). The dry sludge can then be mixed with earth (information derived from interview with Wilko Koning) to reduce hygiene risks, which makes it suitable for use as fertilizer for green in the communal and public areas (see section 6.2 on Spatial Interventions).

Advantages of using this method are that the amount of sewage sludge is reduced by at least 87% (tran, Seng To and Bisaga, 2020), reducing the amount of desludging therefore reducing
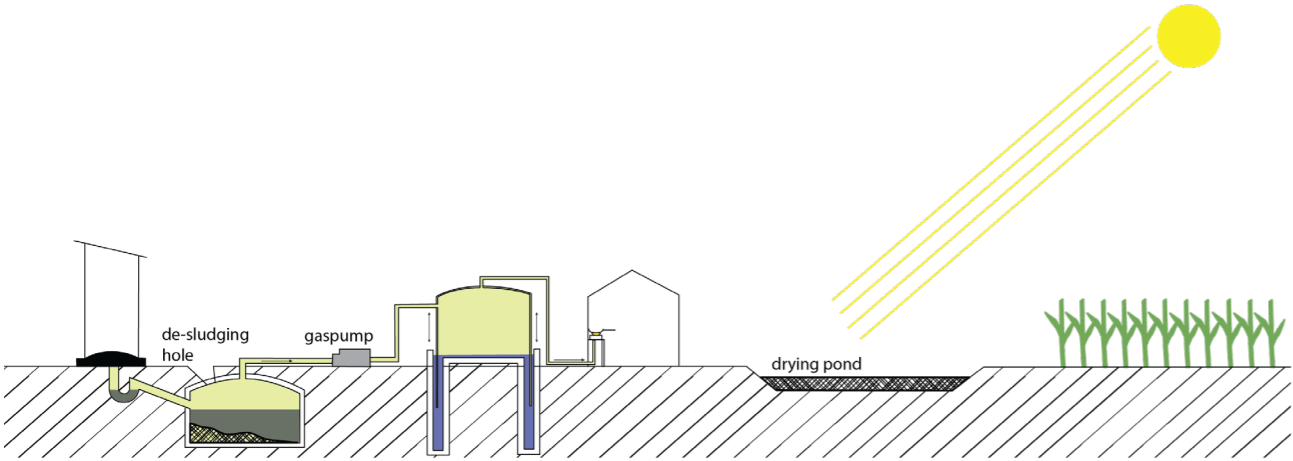
health risks. Next to this, this strongly reduced amount poses a smaller chance on pollution of the direct camp environment. Last, the production of biogas eliminates costs for cooking fuels. Furthermore, based on the energy need (3.12 KwH/household/day based on Al Zaatari average), the energy density of biogas (26.2 MJ/kg), the efficiency of the stove (50% (Itodo, Agyo, and Yusuf, 2007) and the amount of gas that is daily produced by using sewage sludge produced by all camp inhabitants, even more gas is produced than needed. In fact there is a considerable surplus of 699 nM^3 per day (this is gas at normal atmospheric pressure which makes that it takes up a lot of space). This poses an opportunity to sell this gas, or, for instance, use it in the kitchen of a local restaurant.

Tran, Seng To and Bisaga, 2020 elaborate on the relative simpleness of constructing a bioreactor. Based on this information, it is assumed that it takes 2 persons approximately 2 days to install a bioreactor. Next to this, it takes 2 people about one day to lay down the piping and set up the gasholder. So, to construct this system to all 98 community-block of Qushtapa, roughly 1764 1p, 8h WD are needed.
Assuming that one vacuum truck can dislodge 8 bioreactors before having to empty its content, 49 truck movements have to take place each month. Since desludging is considered a two man job, and approximately 3 runs can be made a day, roughly 33 1p, 8h WD are needed to provide this service. Next to this, every

week, one drying bed has to be emptied and the content has to be mixed with earth to turn it into fertilizer. This will take roughly one day each week for two people, meaning that roughly 8 1p, 8h WD are needed. So, in total about 41 1p, 8h WD are needed each month to run the system.

Figure 6.21, sewedge sludge is brought to drying-beds where it is mixed with earth to turn it into fertilizer

Figure 6.19, system of sludge reducement and biogas production

Figure 6.22, example of drying beds for sewage sludge. source: From *"IOCW-Deft"*, by unknown author, n.d.

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps

Design Exploration

solid waste

To reduce the health risk, environmental pollution and to generate an income for camp management and the people involved, waste will be recycled. Based on numbers provided by Oxfam International (2017) discussing a recycling project in Al Zaatari Refugee Camp, it turns out that many different kinds of material can be salvaged from trash (see Figure 6.23). To do this, a recycle station will be set up near the drying beds, where all waste is brought by trucks (see Figure 6.24).

Based on the project in Al Zaatari, where 200 people were employed (approximately 0.0025 employees per camp inhabitant), it is estimated that about 19 people assist in recycling all waste and educating people about the project. This comes apart from the collection service which still provides 42 1p, 8h WD. In Al Zaatari, a total profit of $42 000 per year is possible when all waste is recycled (Oxfam International, 2017). When scaling back to the size of Qushtapa (7900 inhabitants), there is a potential profit of approximately $4100 per year. This money could be spent by the management of the camp on a the system of green vouchers for the communal areas (see sections 6.2 and 6.3 on Spatial Interventions and Intervention Interfaces).

Figure 6.24, waste is collected and brought to recyclingplant
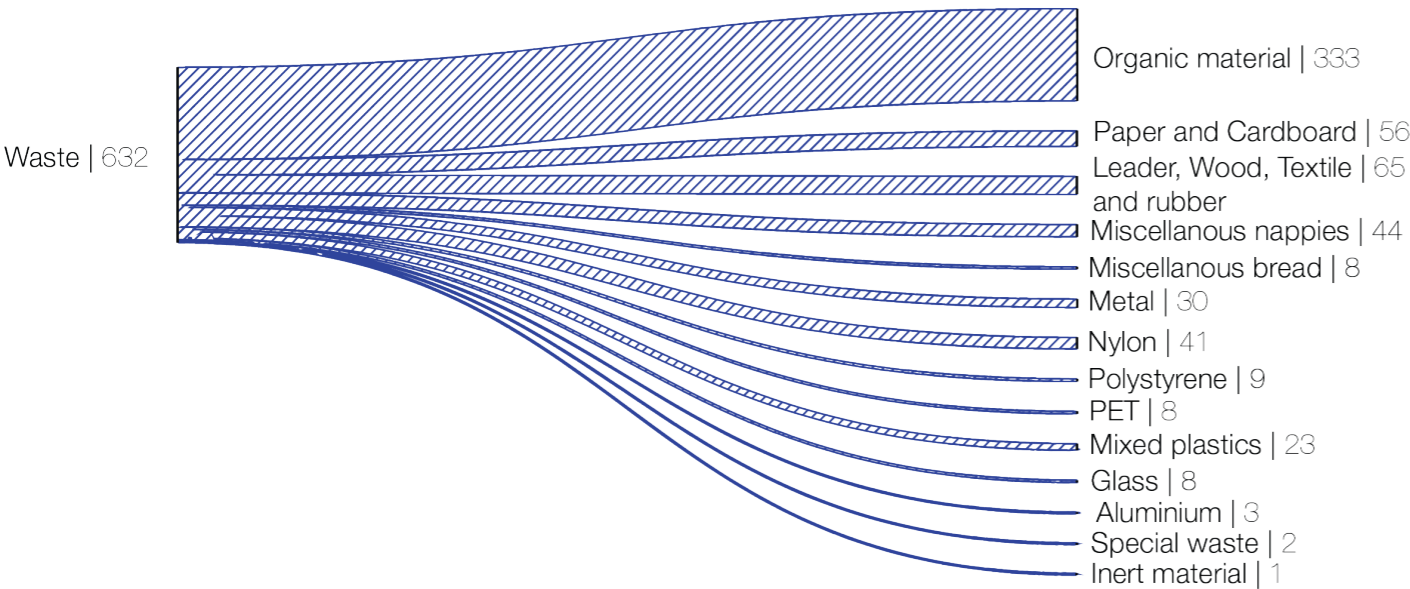
Figure 6.23, different materials that can be recycled
source: information based on **Oxfam** International, 2017

- Waste | 632
- Organic material | 333
- Paper and Cardboard | 56
- Leader, Wood, Textile | 65 and rubber
- Miscellanous nappies | 44
- Miscellanous bread | 8
- Metal | 30
- Nylon | 41
- Polystyrene | 9
- PET | 8
- Mixed plastics | 23
- Glass | 8
- Aluminium | 3
- Special waste | 2
- Inert material | 1

Figure 6.25, waste recycling in Zaatari Refugee Camp, Jordan
From "*OXFAMAPPS*", by Tarling, S., 2019.

work provision by the flows

flow		installation	maintainance
water	providing a flow	395	2/3
	processing a flow	-	224
rainwater collection	providing a flow	-	-
	processing a flow	790	-
electricity	providing a flow	-	10
	processing a flow	-	-
cooking fuel	providing a flow	1764	41
	processing a flow	-	-
sewage sludge	providing a flow	-	-
	processing a flow	see cooking fuel	see cooking fuel
solid waste	providing a flow	-	-
	processing a flow	-	61
Total:		2949	338/339

Figure 6.26, All flows discussed and the work that they provide (counted in 1 person 8 hour working days) in both the installation (in absolute numbers) and the maintainance phase (workingdays per month) are included

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps

FLOW-DESIGN | GENERATE AND PROCESS ALL FLOWS INSIDE THE CAMP

Flow-related interventions in the Transition Phase

In line with the 'New Steps Strategy', the third and last phase, the Post Emergency Phase, is about generating and processing all flows inside the camp as much as reasonably possible. As with the other two preceding sub-sections, all numbers regarding work provision are recapitulated in the table in Figure 6.31.

water

With regard to the provision, distribution and processing of water, nothing changes between the second and third phase.

rainwater

Also regarding the collection and usage of rainwater no new interventions are implemented.

electricity

Regarding electricity, the distribution-system remains the same. However, in the Post Emergency Phase, electricity will be generated locally. There are several ways on how electricity can be produced in the context of a camp such as Qushtapa. Two main methods were analyzed. First of all wind energy was analyzed. For this system, it was assumed that relatively

small wind turbines would be used (with a rotor area of 19.63 m²). Also personal turbines and wind-kites were considered, however it was decided that these may cause noise nuisance and will therefore not be used. Based on the paper by Habali, Hamdan, Jubran and Zaid (1987), we know that the wind density is 67.1 W/m². When taking into account an efficiency rate of 80%, the wind density, the rotor area and an average energy use of 2.6 KwH/household/day (based on Al Zaatari Refugee Camp average), approximately 162 wind turbines would be needed to produce all needed electricity. When taking Dutch regulations on the positioning of wind turbines into account (Ecn, Marco. Broekman and Posad, 2017), about 94213 m² would be needed. Although this space could be used for, for instance, garden and agricultural purposes (see Figure 6.27), it was decided not to use wind turbines for several reasons. First of all, the implementation of a safety zone makes that this method uses relatively much space which is usually scarce in camp contexts. Next to this, wind turbines could cause noise nuisance for people residing nearby. Last, maintenance of (even) small wind turbines may be relatively complex and therefore not viable in a refugee camp context.
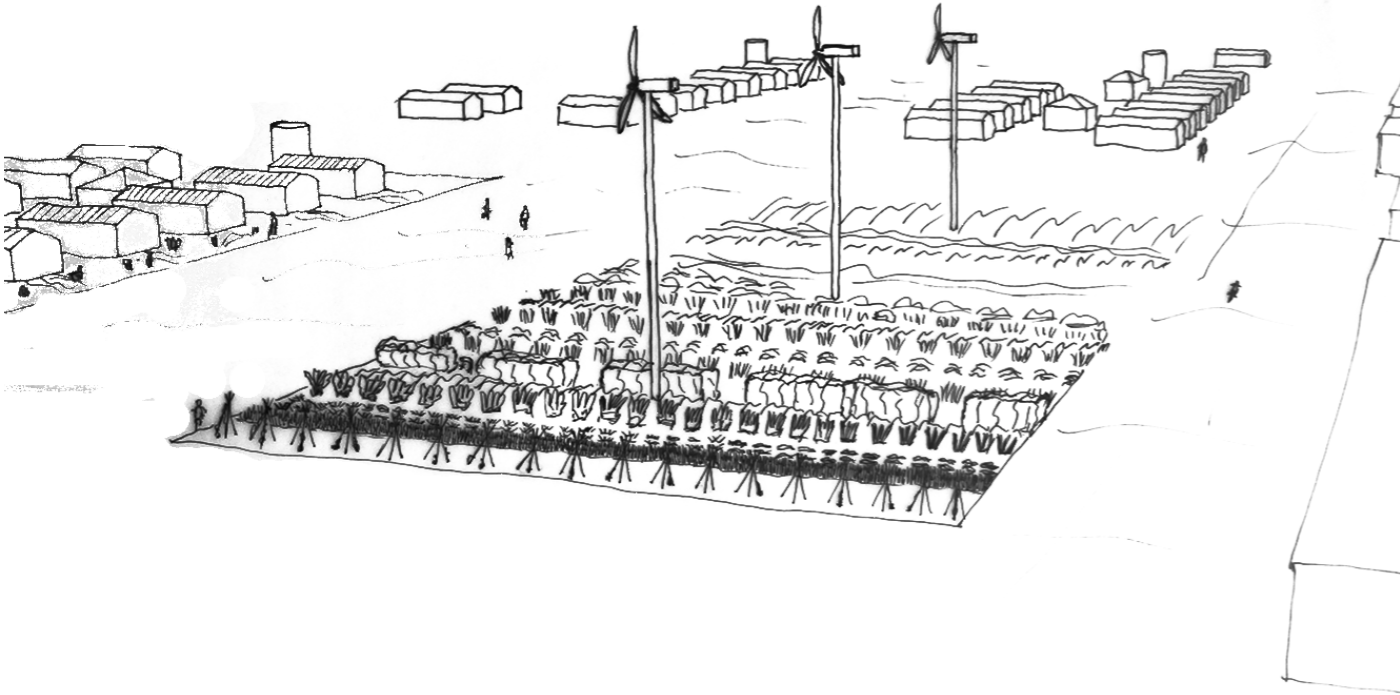

Figure 6.27, windturbines as possible way to generate electricity

PHASE 3 | POST EMERGENCY PHASE

The second main method that was analyzed was solar power by using Photo Voltaic panels (PV-panels). According to Van den Dobbelsteen (2015), PV-panels have an average efficiency of 13%. However, due to the fast development of new techniques, this number rises rapidly throughout time, further increasing the amount of energy that can potentially be generated. When combining this number with the average solar radiation in the south of Jordan (6 kWh/m²/day (Al-Salaymeh, 2006), an efficiency loss of 10% into account due to positioning losses of the panels and the average daily energy demand of Qushtapa (4108 kWh/day), about 5851 m² of PV-panels is needed. These panels will foremost be realized on three centralized areas, to reduce the main installation and maintenance costs (see Figure 6.28). Next to this, a smaller number of PV-panels will be placed on the so-called 'PV-structures' in the communal areas (see section 6.2). By covering all these surfaces with PV-panels, an area of roughly 6745 m² is created. This will create a surplus of 627 kWh/day that can be sold back to the local net. This net will also be used to buffer peak production and consumption (see Figure 6.29). Electricity will not be stored locally due to efficiency losses and relative complexity (e.g. flywheels

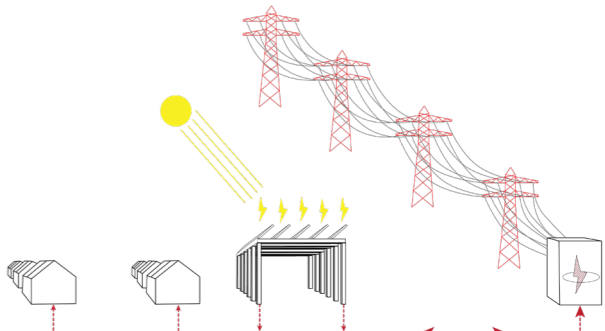**Figure 6.28,** in three central areas most electricity will be produced

Figure 6.29, electricity is generated by PV-panels and buffered on the local net
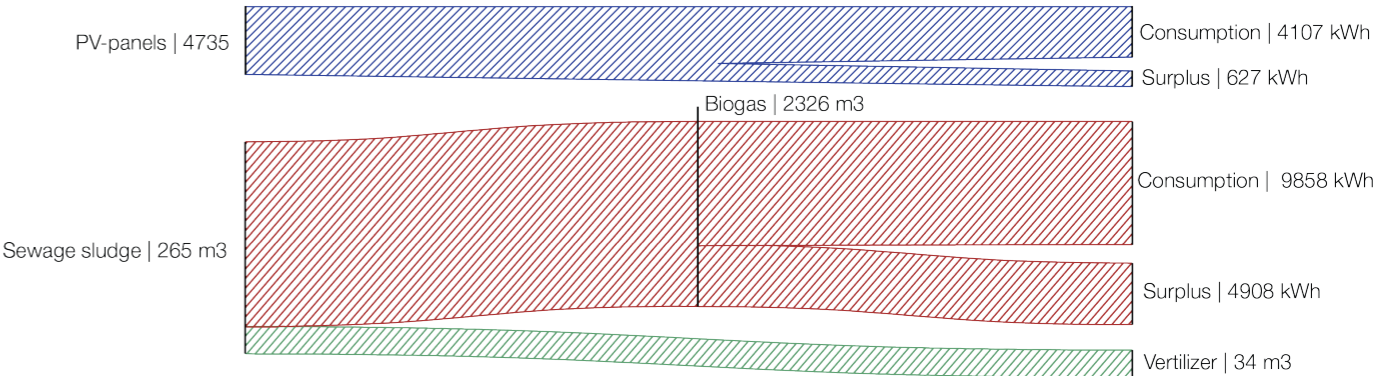

Figure 6.30, energy flow-diagram of Qushtapa

or batteries) or size of the technologies (e.g. systems based on weight or pressure) involved. Based on the a pilot project in Al Azraq Refugee Camp in Yordan, where a yearly profit of 2 million US Dollar is made with a solar-farm, the annual profit of the proposed PV-installation in Qushtapa is estimated on $395 000. This money can be invested in the green voucher program (see section 6.3 on Interfaces), thereby enhancing spatial self-determination and can be used to enable other (micro-)investments, further enhancing (informal) economic activity.

Based on the pilot project in Al Zaatari Refugee Camp, where 200 refugees have a fulltime job to maintain 40100 PV-panels, it is estimated that to maintain roughly 5060 PV-panels in Qushtapa about 25 fulltime jobs are needed. Assuming that they work 20 days a month on average, this comes to a total of 500 1p, 8h WD per month.

cooking fuel and sewage sludge
Regarding the processing of sewage sludge and the associated production of biogas, nothing changes in the third phase.

solid waste
Also regarding the processing of solid waste, the process remains the same.

work provision by the flows

flow		installation	maintainance
water	providing a flow	-	2/3
	processing a flow	-	224
rainwater collection	providing a flow	-	-
	processing a flow	-	-
electricity	providing a flow	-	510
	processing a flow	-	-
cooking fuel	providing a flow	-	41
	processing a flow	-	-
sewage sludge	providing a flow	-	-
	processing a flow	-	see cooking fuel
solid waste	providing a flow	-	-
	processing a flow	-	61
Total:		0	838/839

Figure 6.31, All flows discussed and the work that they provide (counted in 1 person 8 hour working days) in both the installation (in absolute numbers) and the maintainance phase (workingdays per month) are included

6.2 SPATIAL INTERVENTIONS

6.2 Camp evolvement through the phases
In this sub-section, interventions to the camp structure evolving through the phases will be briefly discussed, to add context to the 'zoom-ins' and to show how the interventions fit in the camp (see maps on the following pages).

Phase 1 | Emergency Phase
As discussed above, all actions in this phase are designed not to intervene with the general construction of the camp. This means that all roads are kept free for freight transport, meaning that all interventions relating to spatial self-determination in the direct vicinity of the shelters are only made on the private parcels surrounding the shelters. On block-/sector-level, a start is made with the construction of a public square, allowing for different uses (e.g. sports, meeting people, picnicking and night-time cinema). However, also here, only very basic interventions are made and enough space for construction-traffic is left open. Surrounding the sports field and the main school building, shade is provided along with basic seat-provisions. Last, a distribution hall is constructed, serving the provision of the camps first needs in this phase. This hall, can later be connected to a bigger system of market halls/workshops connected by a covered shopping street

Phase 2 | Transition Phase (see next page)
In this phase, the communal areas are set up alternately in between the community-blocks. By placing them alternately, all inhabitants of all communities have access to communal space, while circulation of heavy traffic is not hindered and all community-blocks can still be reached by heavy traffic such as trucks that dislodge septic tanks. Next to this, construction on the square continues, creating extra borders and better equipping it to serve multiple uses, for instance by adding extra benches and a small building to store sports equipment and street-furniture. Last, in the central area, two halls are added that serve as market hall and workshop space, enhancing (informal) economic activity.
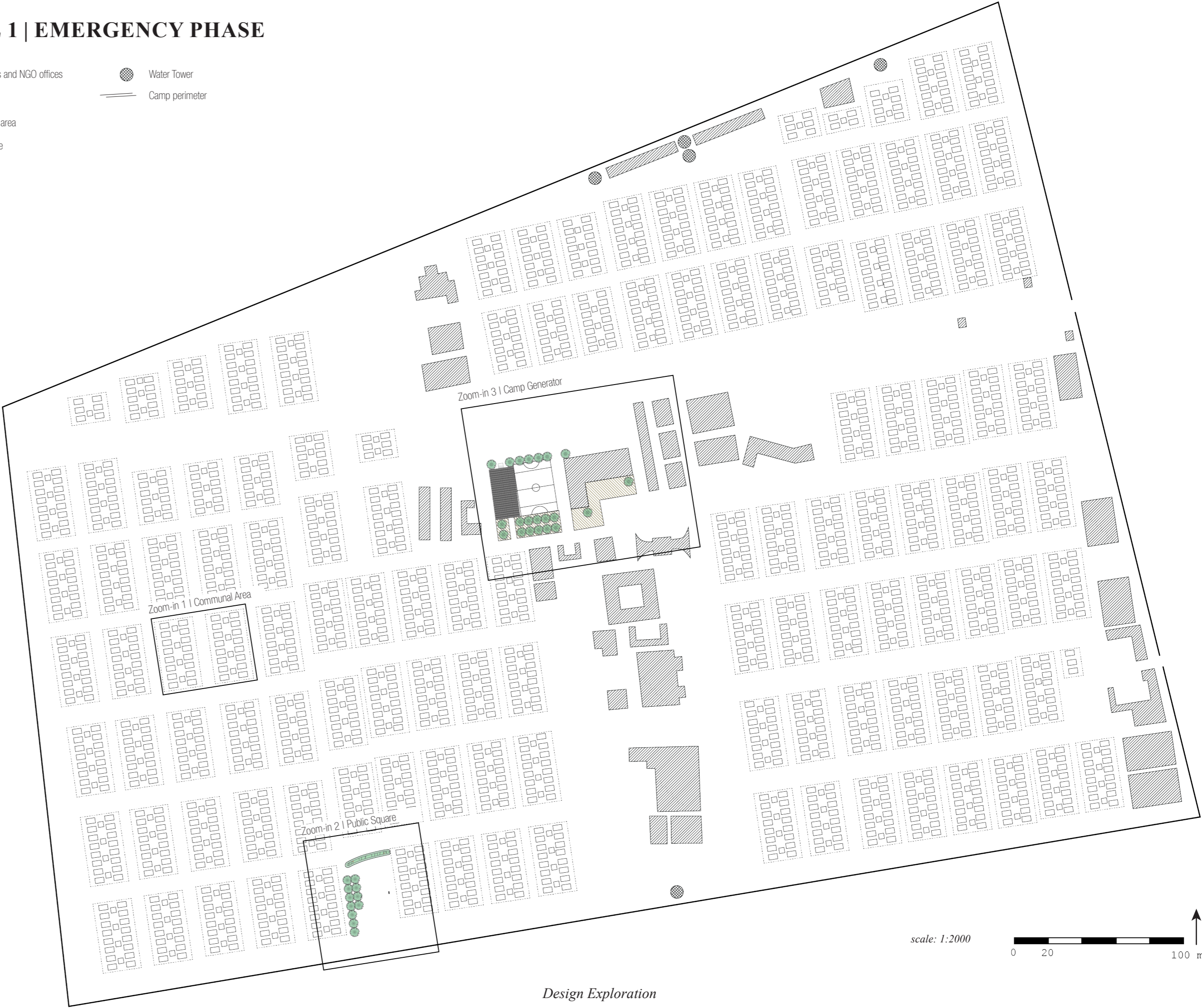
Phase 3 | Post Emergency Phase (see next page)
In the last phase, the structures in the communal areas are finalized by adding PV-structures (Photo Voltaic) that provide shade and generate electricity. Regarding the square serving the Block-/Sector-level, the small storage building is expended to a larger open structure providing a shaded area to reside, store material and contain small enterprises and shops. Next to this, a part of the fence is transformed to a PV-wall creating a visual border on the south-side of the square, interaction space with the local community, enhancing (informal) economic activity and a shop-area for both camp-inhabitants and local residents. Last, in the central area, all three halls and several existing buildings (NGO-offices, school and a distribution hall) are connected to one another by a gallery covered with PV-panels creating weather protection and a clear center for (informal) economic activity by providing space for shops and workshops.

Emergency Transitional phase phase

Post emergency phase

0 6 months 2 years 20 years

Legend

Ammenities and NGO offices	Water Tower
Shelters	Camp perimeter
Communal area	
PV-structure	
Tree	

Zoom-in 3 | Camp Generator

Zoom-in 1 | Communal Area

Zoom-in 2 | Public Square

scale: 1:2000

0   20   100 m

PHASE 2 | TRANSITION PHASE

Legend

▨	Ammenities and NGO offices	◉	Water Tower
⊞	Shelters		Camp perimeter
▨	Communal area		
▯	PV-structure		
●	Tree		

Zoom-in 3 | Camp Generator

Zoom-in 1 | Communal Area

Zoom-in 2 | Public Square

scale: 1:2000

0   20   100 m

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
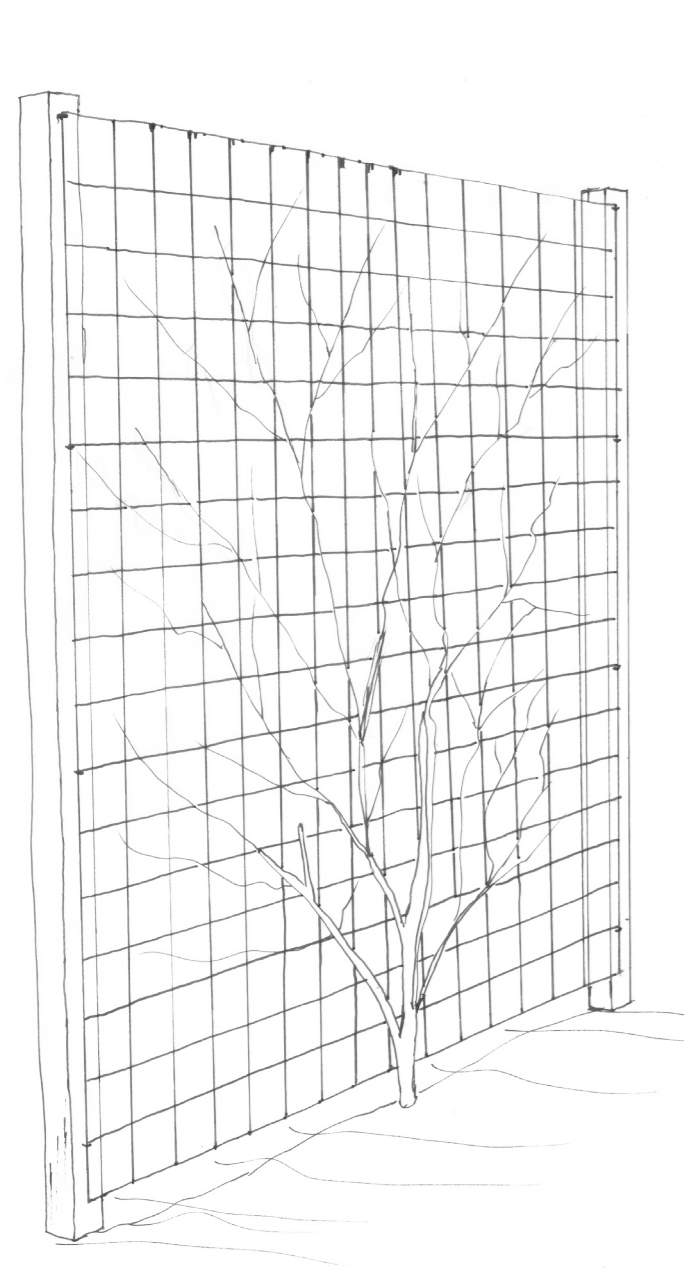The case of UNHCR refugee camps

PHASE 3 | POST EMERGENCY PHASE

Zoom-in 3 | Camp Generator

Zoom-in 1 | Communal Area

Drying-Bed   Earth excavation

Recycle Center

Zoom-in 2 | Public Square

scale: 1:2000

0   20   100 m

Design Exploration

CONSTRUCTION ELEMENTS

Construction Elements

The interventions that will be elaborated upon below, consist of several separate elements. These elements are all relatively cheap, easy to acquire and simple to construct and maintain. Besides, all elements are relatively easy to alter or remove. Therefore, for instance, no trees are planted directly in the ground. This enhances the temporary character of all interventions.

Element 2 | watertanks as plantbeds (1x1x0.8 m)
For this element, old (1000 L) water tanks are used which are cut open at the upper side after which they are filled with earth. Plants can be acquired in the plant market hall via the 'Green Voucher Project' (see sub-section on Zoom in 3, the 'Camp Generator' and section 6.3). If necessary, drippers can be installed to water the plants during dry periods.

Element 4 | PV-structure (5x4x3 m)
This element is constructed from steel beams which are dug in the ground and anchored with concrete. The structure is covered by PV-panels. Structures like this are widely available as parking lot covering structure. When used to construct a closed building, glass windows can be placed facing the PV-panels to create a closed roof with roof lights. If necessary, the structure can be heightened and a floor can be added.

Element 1 | growframe (1.5x0.2x2 m)
This element consists of reinforcement frame with two wooden poles which are placed in the ground. With each frame, a creeper plant that is accustomed to the local climate is provided.

Element 3 | watertank with fixed bench (2x2x0.8 m)
For this element, an old (1000 L) water tank is used which is cut open at the upper side after which it is filled with earth in which a (small) tree is planted. Wooden benches are fixed to the tank to create a meeting place. If necessary, drippers can be installed to water the tree during dry periods.

Element 5 | small football goal (2.5x0.8x1.5 m)
Metal small football goals are acquired which can be anchored to the ground to withstand vandalism but are also simple to place or remove.
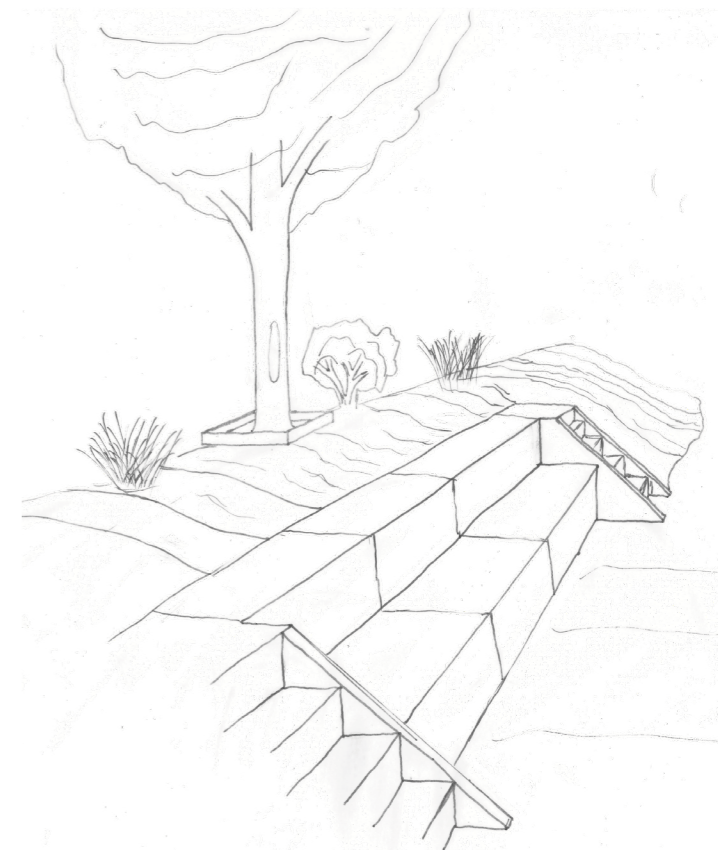
Element 6 | earth wall and built in concrete bench
This element is made of earth from the location itself. All soil is extracted and processed at the same location, creating a 'soil-cycle'. Therefore, a vegetated wadi will be present behind this earth wall. Concrete or another material is used to integrate a bench where people can sit. Trees and plants are added for shade.

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps
Design Exploration

Design for Communal Space

First, the design intervention itself and how it evolves through the phases will be elaborated upon. After this, the design principles out of which the design itself is constructed will be discussed.

For each phase, a map is provided showing the lay-out of the communal space in that particular phase. In the section on the third and final phase, a section and impression are added.

Phase 1 | Emergency Phase

In the first phase (Emergency Phase), not much changes to the standard UNHCR lay-out of a community-block. The only elements that are added are Growframes of 1.5 by 2 meters made of two wooden polls and a reinforcement frame (see Figure 6.32). Every household is supplied with one frame and a creeper that they are free to place anywhere at the border of their parcel. This gives character to the street façades without hindering traffic, provides privacy on ones own parcel and enables a basic form of spatial self-determination. Next to this, all materials needed for this are widely available, cheap to acquire and the structure itself can be easily removed.
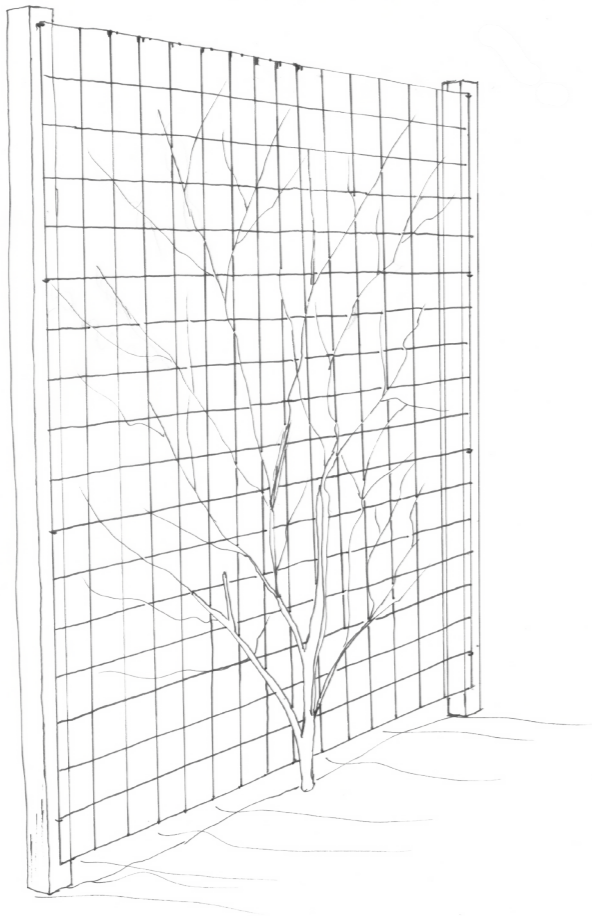
Figure 6.32, growframe (1.5x0.2x2m)

Legend

Road

Shelters

Bathroom

Growframe

scale: 1:250

0   2.5   5   12.5 m

0   6 months   2 years   20 years
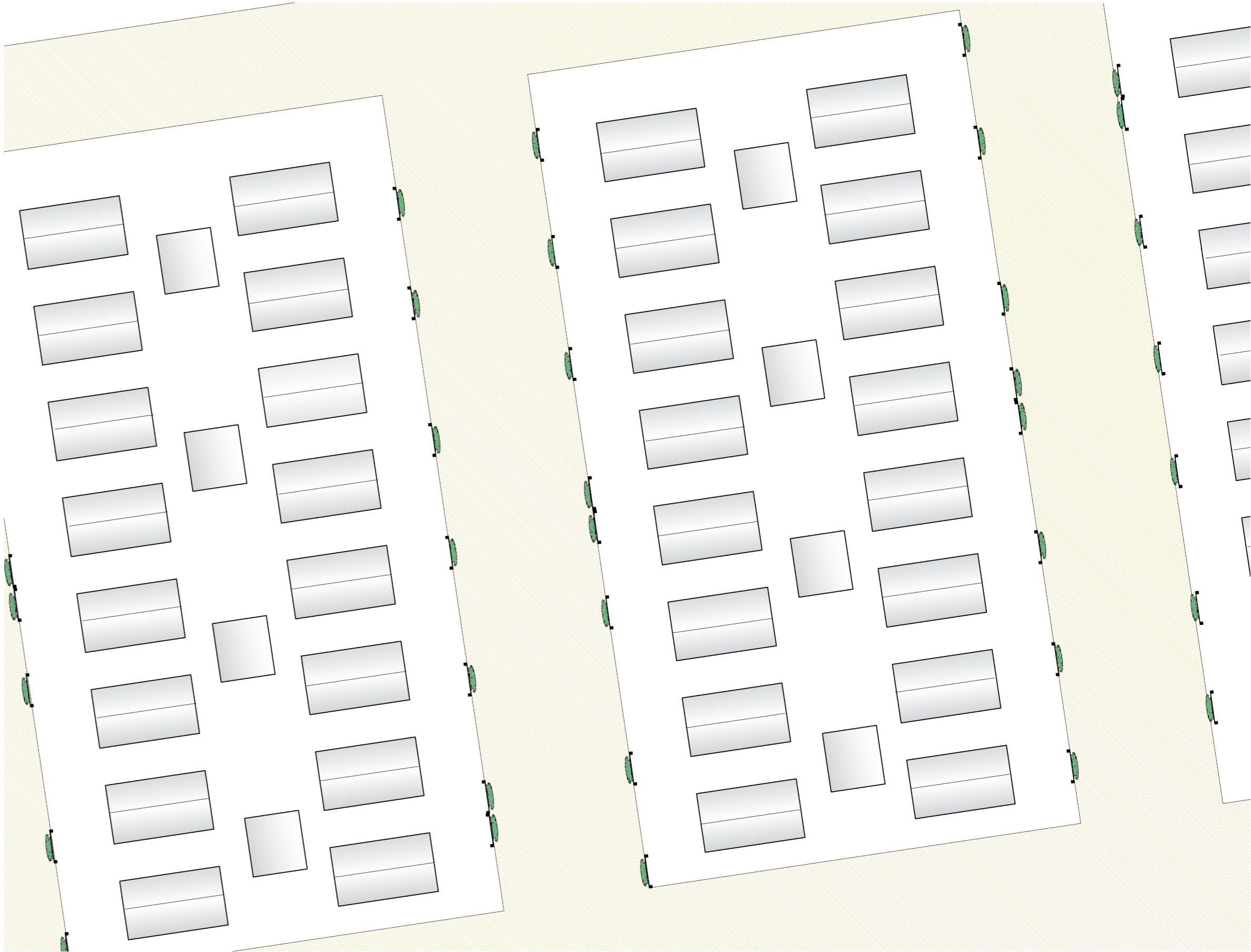
Phase 2 | Transition Phase
In the second phase, every alternating street will be used as communal area. This will be done by blocking of half the street by linked together water containers which are filled with earth (see section on construction elements). In these a small tree and other smaller green that is adjusted to the local climate will be planted. In this way, emergency vehicles (e.g. ambulances or fire trucks) can still pass through, while at the same time a clear visual border element is created which also marks the entrance to the communal area. Within the communal area, a paved pathway runs along each side to ensure easy accessibility to all adjoining shelters. In between these pathways, T-shaped, angular, elongated and square elements made from water containers which are linked together create different smaller enclosed areas to reside (see Figure 6.33). These elements are filled with earth in order for green to grow in them. Some of the elements contain a small tree which provides shade and cools the area through evapotranspiration (see Figure 6.34). Besides this, they provide visual vertical elements characterizing the different spaces. In this way, the larger area is divided in smaller spaces, creating a more secure feeling and sense of ownership which in turn fosters spatial self-determination since it invites people to place, for instance furniture and/or plant bins in these spaces. These plant bins consist of earth filled water containers as well and will be distributed among the communities. They can be placed freely within the communal area, as long as they stay in line with the pre-placed elements, thereby still allowing for emergency vehicles to pass. This will enhance spatial self-determination and interaction between inhabitants. Smaller (edible) plants growing in the pre-arranged green elements can be self-arranged by the inhabitants as well, further enhancing spatial self-determination. The containers with trees in them will have benches attached where people can sit, inviting people to reside there. By planting all green in these tanks, the camp keeps a temporary character and all elements can relatively easy be removed. All green will be irrigated by collected rainwater. The system that provides for this, will

be further explained below in the 'principle sub-section'.

Except for the trees, all green can be 'bought' in the plant market-hall with 'plant-vouchers' which are distributed per 'duo-community'. Budget for this system will be partly created by savings due to the circular management of flows (see the section on flow-design and the section on interfaces of the flow-design and the spatial design).
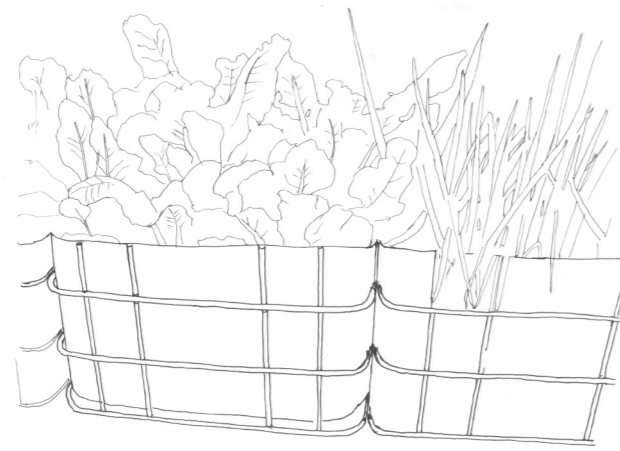

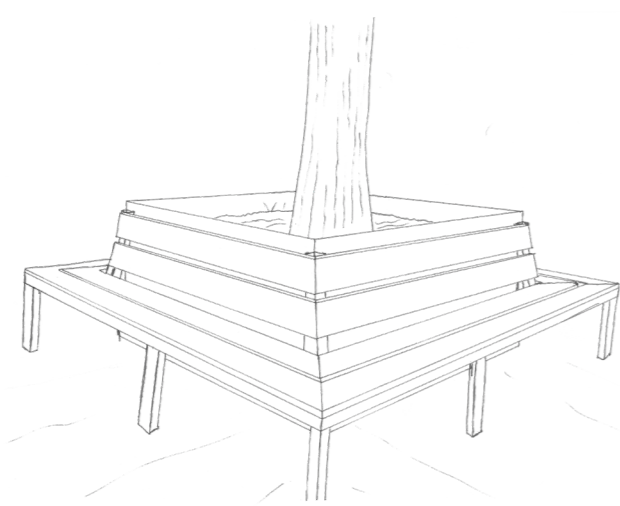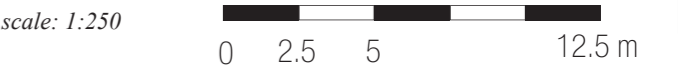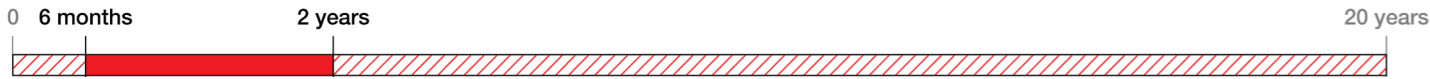**Figure 6.33,** green filled water tanks (1x1x0.8m)

Figure 6.34, water tanks with fixed bench (2x2x0.8m)

Legend

	Road
	Gravel foundation
	Communal area
	Shelters
	Bathroom
	Informal shelter structures
	Gasholder
	Tree in water tank with fixed benches
	Linked water tanks with green
	Growframe

scale: 1:250

0   2.5   5   12.5 m

0   6 months   2 years   20 years
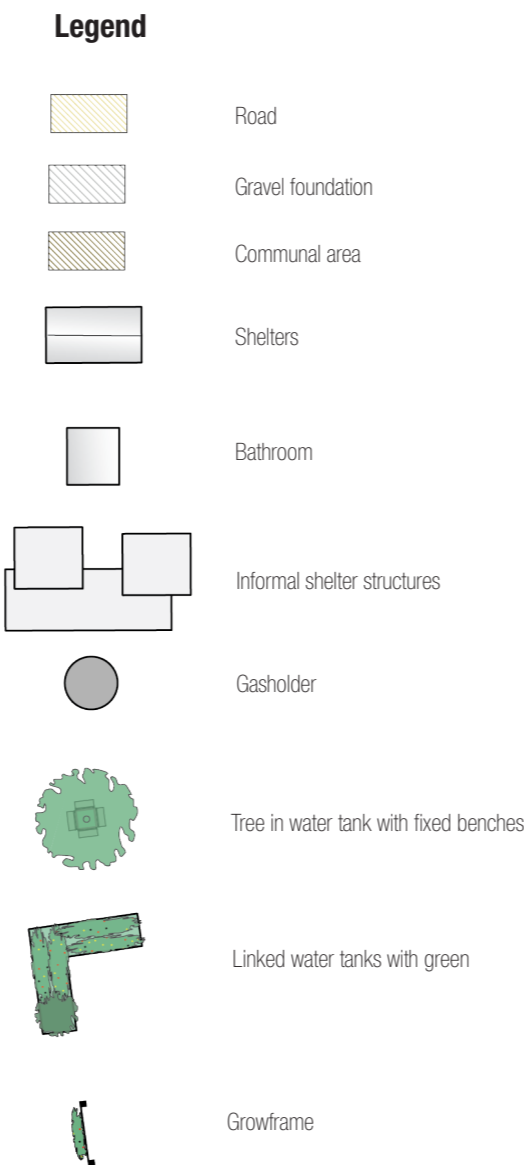
Phase 3 | Post Emergency Phase
In the third and last phase, open identical structures with PV-panels on top of them will be placed in line with the existing elements, still allowing emergency vehicles to pass. These structures are widely available as parkinglot covering structure and consist of a simple construction of steel beams and PV-panels which are dug in the ground and anchored with concrete. They create shaded areas and clearly bordered spaces where people can reside while generating electricity (see Figure 6.35). Since these are the most (relative) expensive elements, they will only be placed when the camp reaches its most (semi-)permanent stage. This is also in line with the phasing principles of the 'flow-design'. These elements will not be placed in all communal areas since some of them are to narrow which would obstruct vehicles in case of an emergency.

In the impression and the section, the different elements which are discussed above (e.g. different enclosed spaces and a diverse facade) are illustrated.
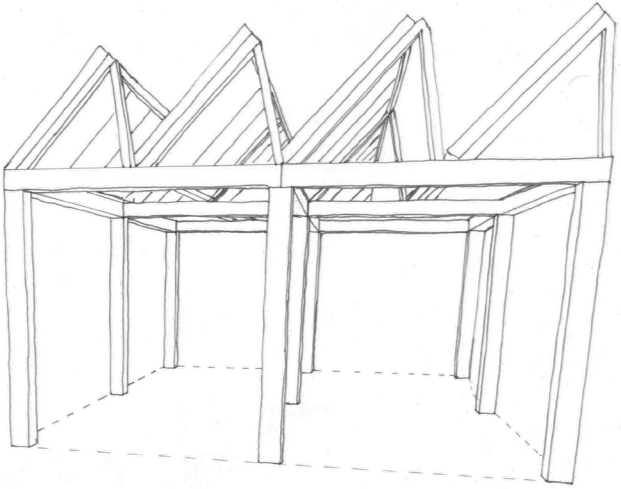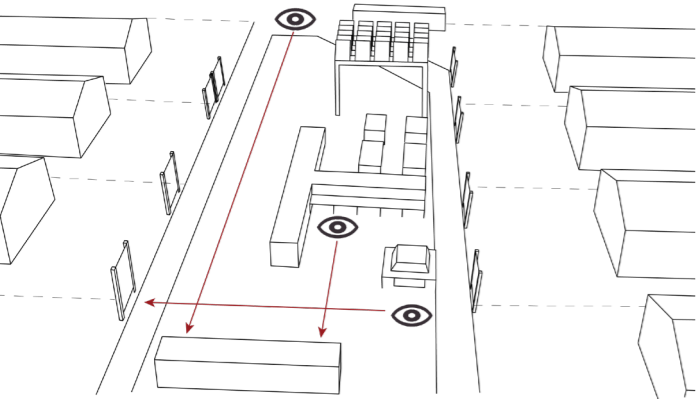

Figure 6.35, PV-structure (5x4x3m)

view 1

| 0 6 months | 2 years | 20 years |

Legend

Road

Gravel foundation

Communal area

Shelters

Bathroom

Informal shelter structures

Gasholder

Tree in water tank with fixed benches

Linked water tanks with green
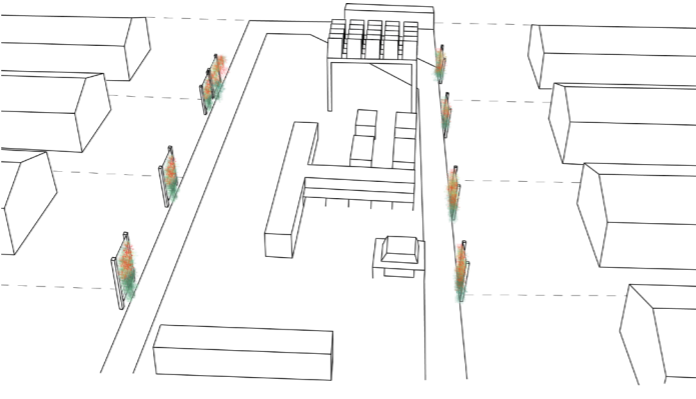
Growframe

PV-structure
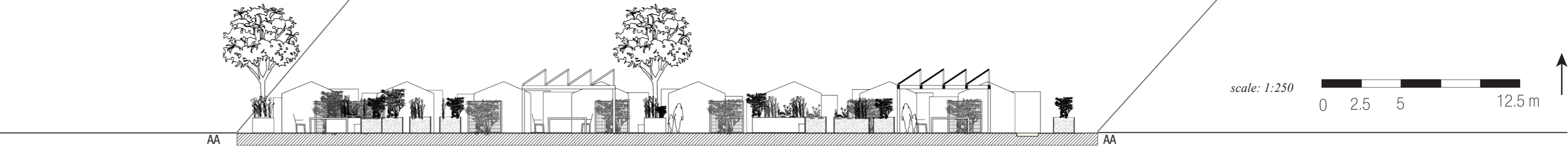
scale: 1:250

0   2.5   5   12.5 m
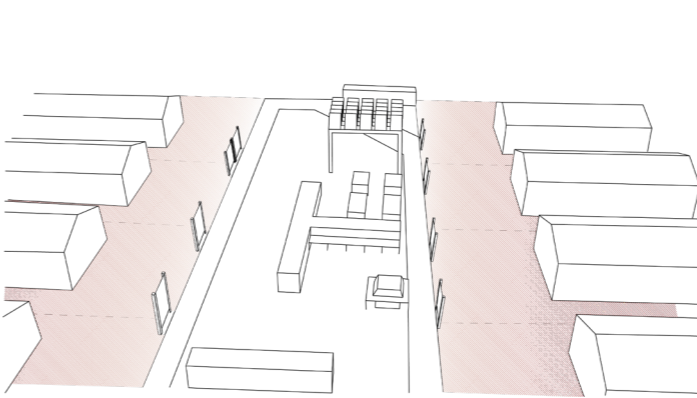
Design principles
As illustrated above, there are ten conceptual principles that need to be met in order for the design to function or, in other words, enhance (informal) economic activity and/or spatial self-determination. These principles are based on the findings presented in Chapter 5.


Principle 3 | private-public transition
Since the private parcels are directly bordering the communal space without a transition zone, the communal space may feel more as an extension of the private parcel, inviting people to reside and self-arrange the communal space (spatial self-determination). Next to this, it might also foster a sense of ownership of the communal area, creating a sense of social control, which in turn makes the communal space safer for vulnerable groups such as women and children.
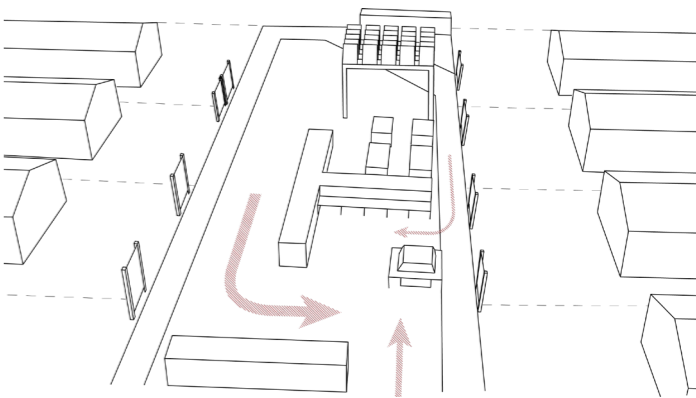
Principle 4 | arranging different entrances
Different entrances of different sizes to one place, create a diverse and more interesting place since more can happen from different sides. This will make a place more pleasant to reside, which in turn fosters spatial self-determination.

Principle 1 | broken lines of sight
In order to create enclosed spaces where people are comfortable to reside and self-arrange (spatial self-determination) their space, these spaces should be visually bordered of. However, to keep character and a certain openness in place, lines of sight should have different lengths and an occasional glimpse to another space should be included in the design.
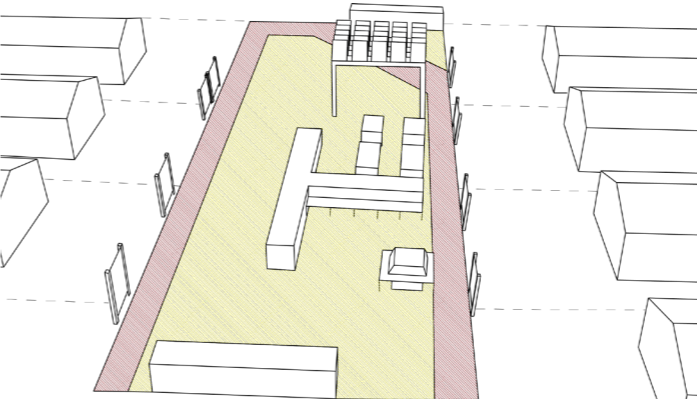

Principle 2 | creating diverse borders
By providing each household with two wooden poles, a reinforcement frame and a creeper plant, a more organically evolved diverse border originates. Next to this, this enables a very direct form of spatial self-determination.

Principle 5 | different pavement types
The pathways along the communal area are differently paved than the residing area itself, therefore creating a clear demarcation of different space types. This will help to prevent conflict and allows a clear and safe entrance to all shelters.


Principle 6 | providing shade and character
By adding trees and the open 'PV-structure' to the design, extra shade is provided improving the climate, preventing a 'heat-stress' effect and enhancing biodiversity. This will also invite people to frequently use the area and make it their own (spatial self-determination). Next to this, both the trees and the 'PV-structure' also create clearly visual elements that demarcate and characterize specific spots.
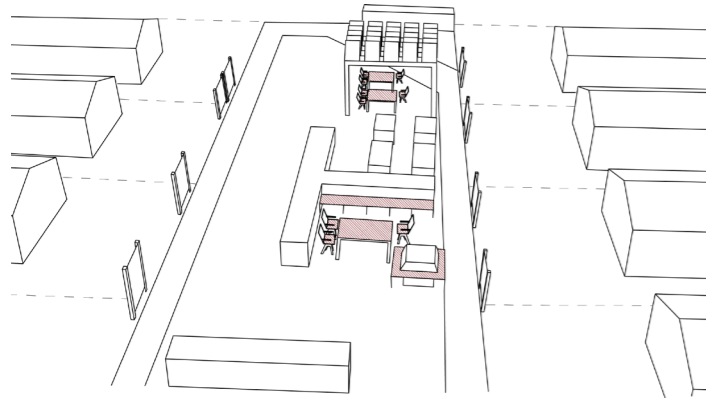
Principle 7 | providing seating possibilities
By providing fixed benches and enabling people to buy street furniture at the plant market hall, the communal area becomes more inviting to reside. Besides this, placing ones own or collectively bought furniture in the communal area is a very direct form of spatial self-determination.
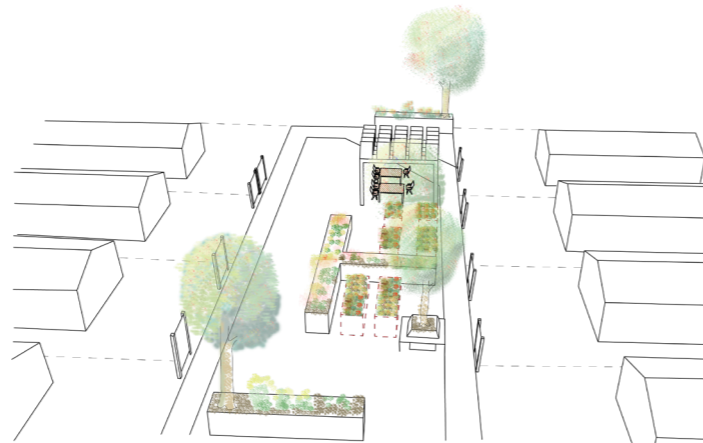

Principle 8 | providing materials for self-arrangement
Providing water containers that can be cut open at the upper side and then filled with earth and plants, is a simple and cheap method to let people self-arrange the space they use (spatial self-determination). Each 'community-duo' will be provided with twelve 1x1x1 m water containers. Plants and furniture can be 'bought' with 'plant-vouchers' at the plant market hall. A certain amount of these vouchers will be distributed per month to individual households. This will enhance a sense of ownership and interaction between the inhabitants.
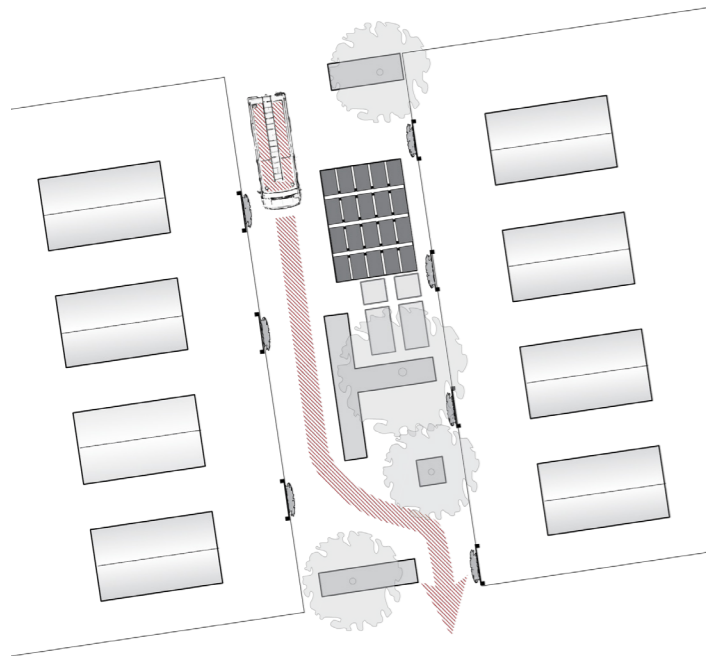
Principle 9 | allowing occational passage of vehicles
All structures are placed in such a way, that in specific cases, a truck or other type of vehicle can pass. This is done for safety (e.g. fire hazard) and practical (people moving in or out) reasons.
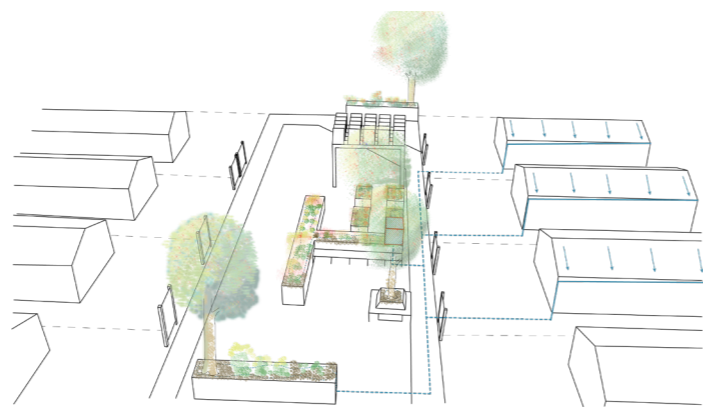
Principle 10 | rainwater collection for irrigation
To ensure that the plants do not dry out in warm and dry periods, they have to be irrigated. This will be done by collecting rainwater from the shelter roofs, which will be collected in a water container placed on top of an earth filled container. In this way, water can be distributed along the plant beds through underground dripping pipes, which reduces evaporation and salination of the ground. The system will be powered by gravity

Design for Public Square

First, the design intervention itself and how it evolves through the phases will be elaborated upon. After this, the design principles for the design will be discussed.

For each phase, a map is provided showing the lay-out of the 'public square' in that particular phase. In the third and final phase, a section and impressions are added.

Phase 1 | Emergency Phase

In the first phase (Emergency Phase), only very basic interventions are made which completely fit in the existing grid of the camp. First of all, a small wadi is dug in a curve, bridging the different positions of the adjoining community-blocks. Besides functioning as water retainment during rainfall, this wadi creates a clear northern border of the square. On the western side of the square, room is made for a street to pass along the square. Next to this street, a lane of trees is placed. As the trees in the communal area, these trees are planted in old water tanks (see Figure 6.36) to retain a semi-permanent character. Benches are attached to the tanks in which the trees are planted to invite people to reside on the square in the shade (see Figure 6.37). Last, two soccer goals are placed on the square to invite people to play football or other games (see Figure 6.38). In this way, the square allows for different uses, determined by the user, which is a form of spatial self-determination.
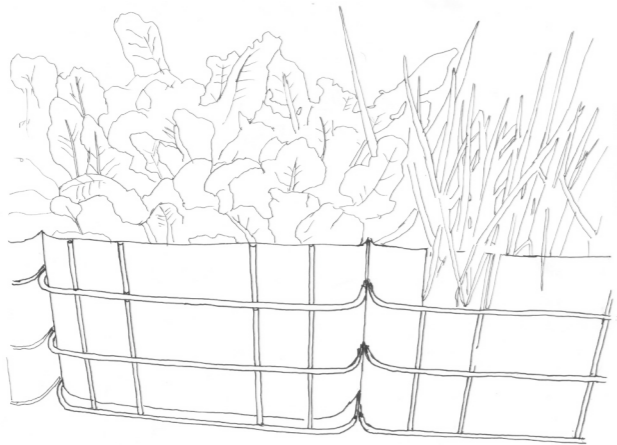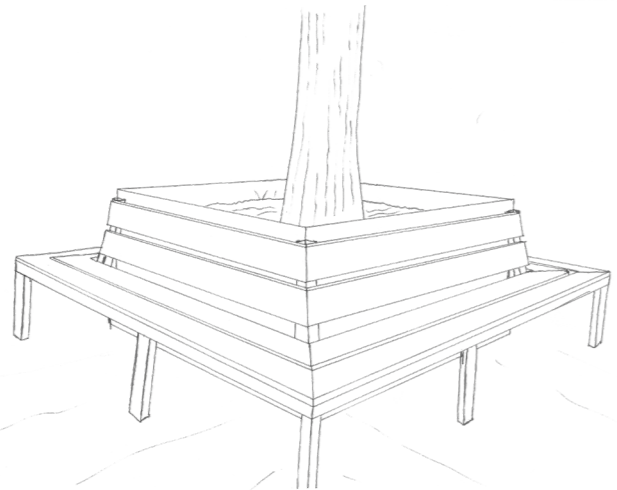

Figure 6.36, green filled Water tanks (1x1x0.8m)

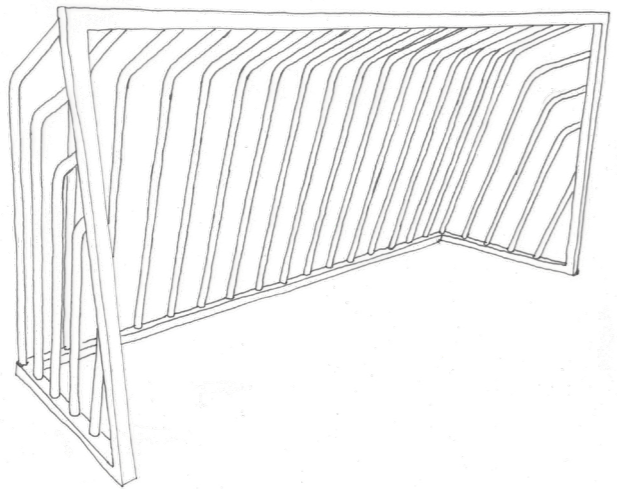**Figure 6.37,** water tanks with fixed bench (2x2x0.8m)

Figure 6.38, small football goals (2.5x0.8x1.5m)

Legend

Road

Gravel foundation

Communal area

Shelters

Bathroom

Tree in water tank with fixed benches

Wadi with plants

Growframe

scale: 1:300

0 3 6 15 m

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps

Phase 2 | Transition Phase

In this phase, the wadi is further deepened out and extended along the eastern border of the square. The wadi on the eastern site of the square also forms a clear border and barrier, providing for an increased sense of privacy for the households located here. The shelters can be accessed from the north, south and by using the small bridge. Earth from the excavation of this wadi is used to form a small elongated hill just south of the northern wadi (see Figure 6.39). On the wadi shores and the 'hill-side', trees are planted in tanks, to provide shade and create vertical bordering elements. In this way, the square will form a characteristic sight for by-passers along the curved wadi-border. Next to this, the shade, plants and height differences will invite people (especially children) to play and reside on the shores and slightly curved 'hillside'. This is further strengthened by several elongated benches which are dug into the earth wall (see Figure 6.39). The most southern benches also form a tribune where people can watch games, a movie or enjoy a cultural event. This further enhances different usages of the square, therefore enhancing spatial self-determination. On the south side of the square, a small building in the form of an enwalled PV-structure is placed, where materials, such as a beamer sport equipment and street furniture can be safely stalled (see Figure 6.40). This further invites people to use the square in any kind they want (spatial self-determination).
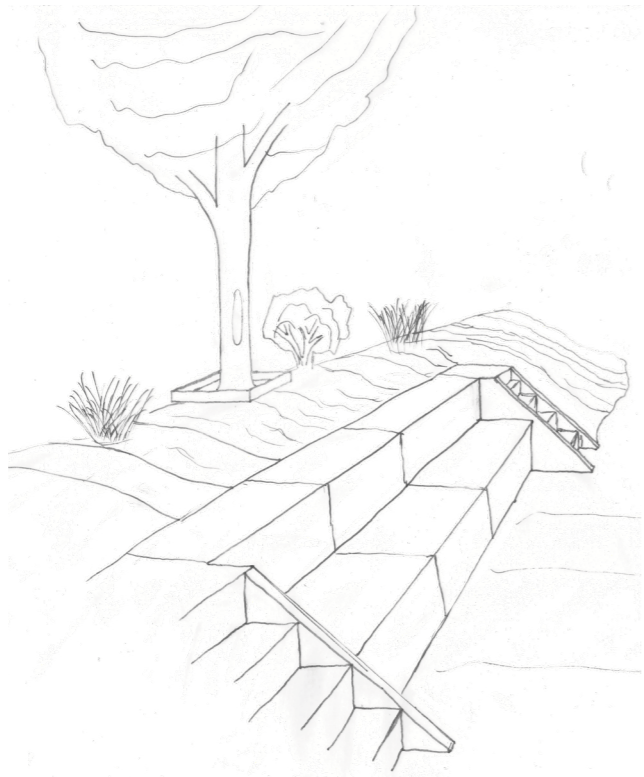

Figure 6.39, earth wall with built in bench
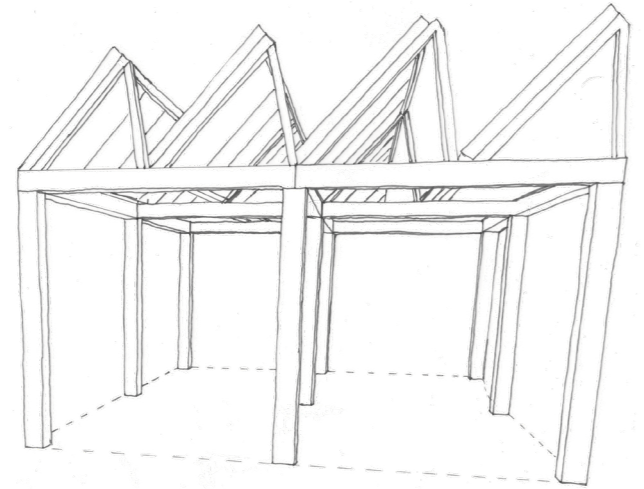
Figure 6.40, PV-structure (5x4x3m)

Legend

	Road
	Gravel foundation
	Public Square area
	Shelters
	Bathroom
	Informal shelter structures
	Gasholder
	Tree in water tank with fixed benches
	Height-difference with build in bench
	Growframe
	PV-structure

0   6 months   2 years   20 years

scale: 1:300

0   3   6   15 m
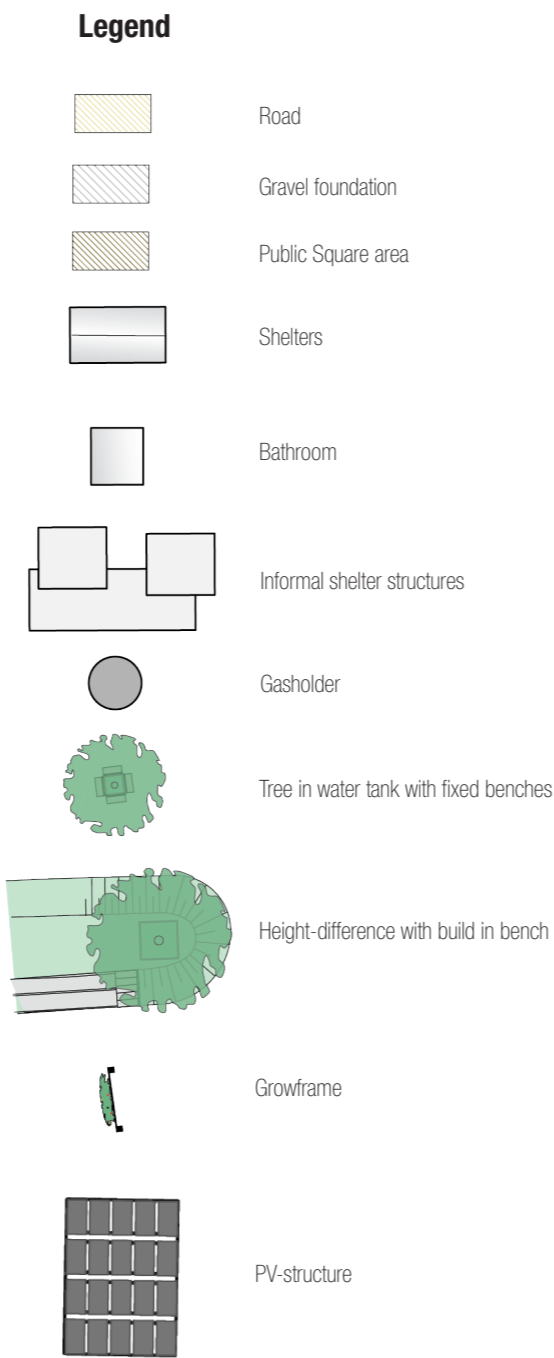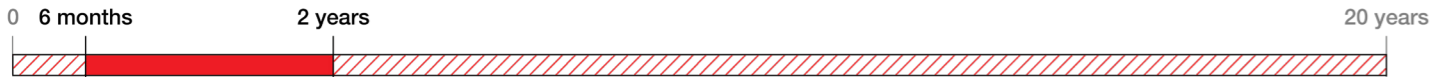
Phase 3 | Post Emergency Phase

In the third and last phase, two main elements are added. First of all, the storage building is extended with a large canopy of PV-panels. This structure creates a clear border to the south side of the square while creating different corners with different characters therefore inviting for different uses. This cannopy is constructed in the same way as the smaller PV-canopies in the communal areas (see Figure 6.41). The north side of this canopy is used as an open area where people can reside in the shade while having a view on the main part of the square. This enables a form of social control and makes it safer for some groups to use the square. Children, for instance, can play on the square and along the tree line while their parents can keep an eye on them. In the southern part of the structure, shops and workshops are placed. They can be accessed from the inside and supplied at the southside, next to the road. This will enhance (informal) economic activity and it will draw more people to the square. Last, south of the actual square, a part of the old fence is replaced with an open canopy of PV-panels including an entrance into

the camp. Small shops can be located here, which can also sell products to the local residents living just south of the camp (see overview maps). Together with the larger 'solar-canopy' on the square, this element not only draws extra people to the square, it also creates a striking sight for people and camp-traffic passing by.
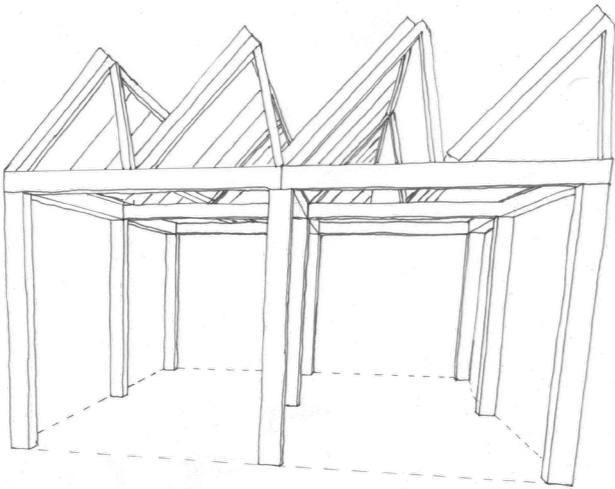
Figure 6.41, PV-Canopy (5x4x3m)

view 1

Legend

	Road		Tree in water tank with fixed benches
	Gravel foundation		Height-difference with build in bench
	Public Square area		
	Shelters		Growframe
	Bathroom		
	Informal shelter structures		PV-structure
	Gasholder		

view 2

view 1

view 2

scale: 1:300

0   3   6   15 m

0 6 months   2 years   20 years

DESIGN PRINCIPLES | PUBLIC SQUARE
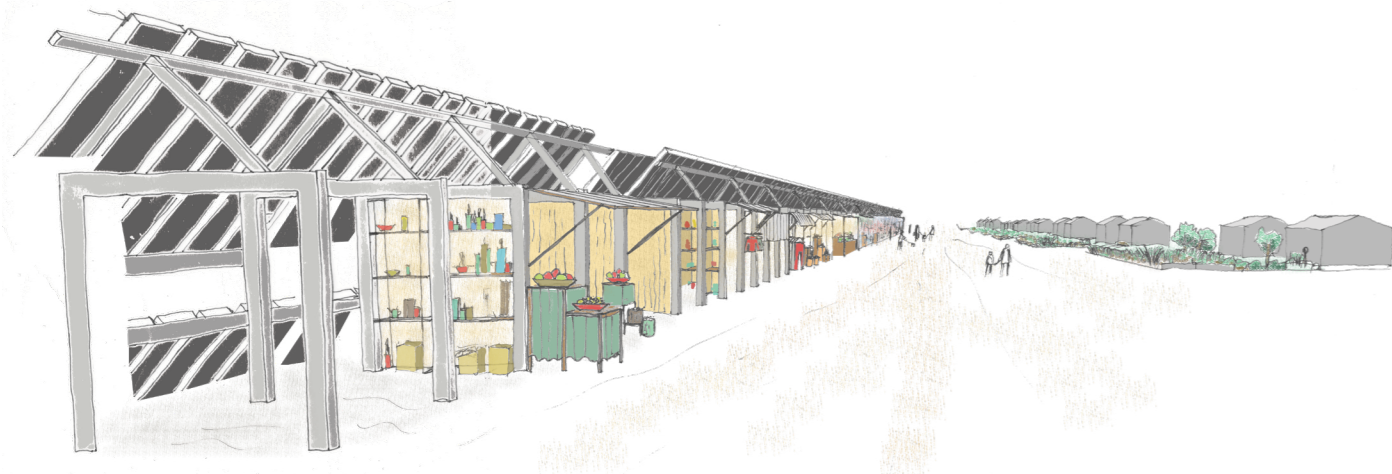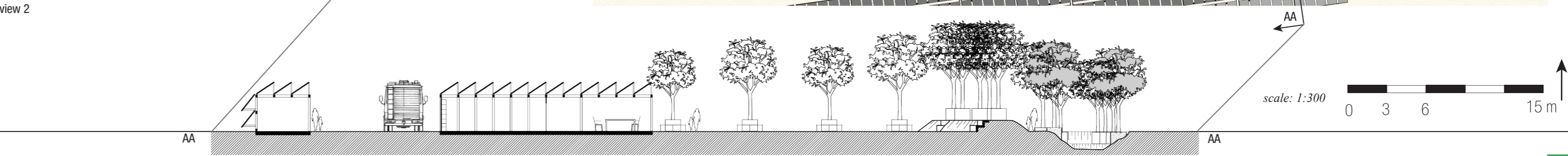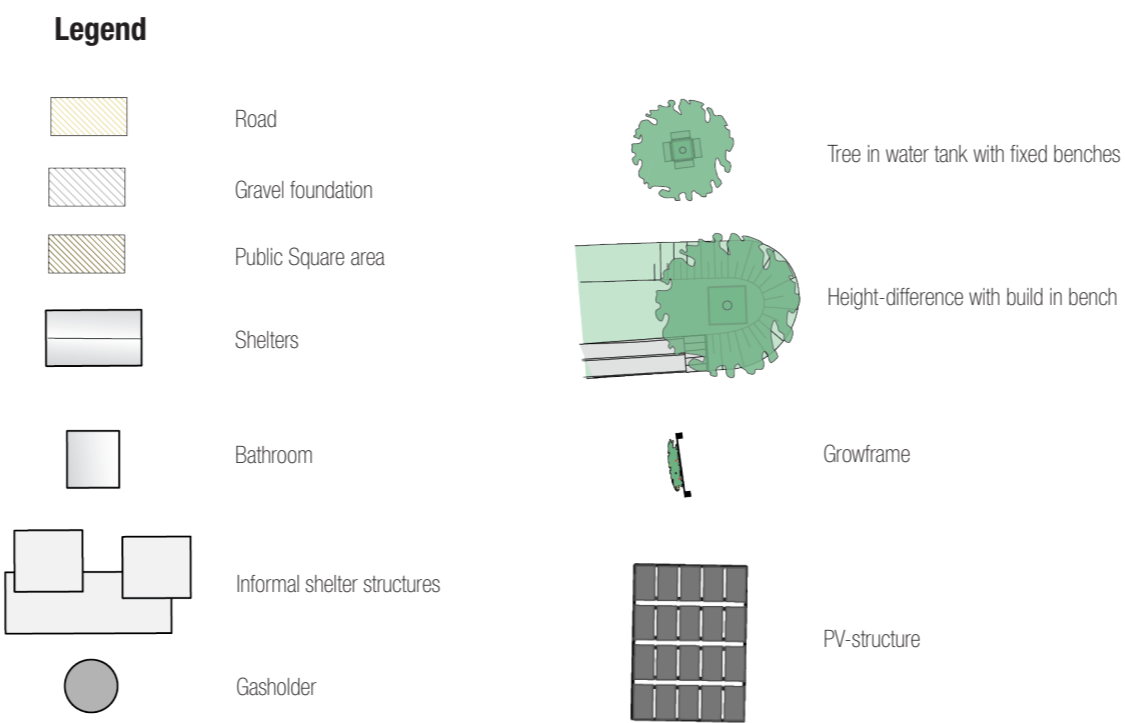
Design principles
As illustrated above, there are eight conceptual principles that need to be met in order for the design to function or, in other words, enhance (informal) economic activity and/or spatial self-determination. These principles are based on the findings presented in Chapter 5.

Principle 3 | use different kind of pavements
On the western- and eastern side of square, a paved route marks a route for traffic (respectively for heavy traffic and residents). This demarcates the borders of the square and provides safety since its use is self-evident.
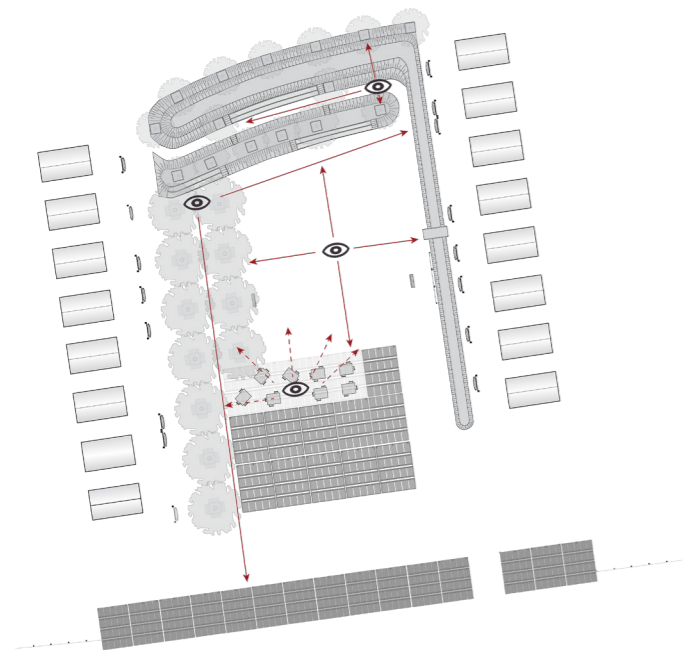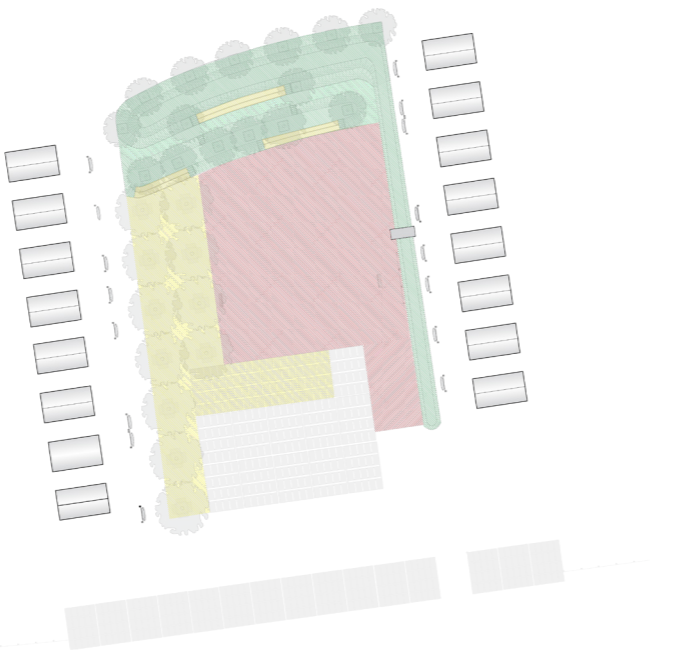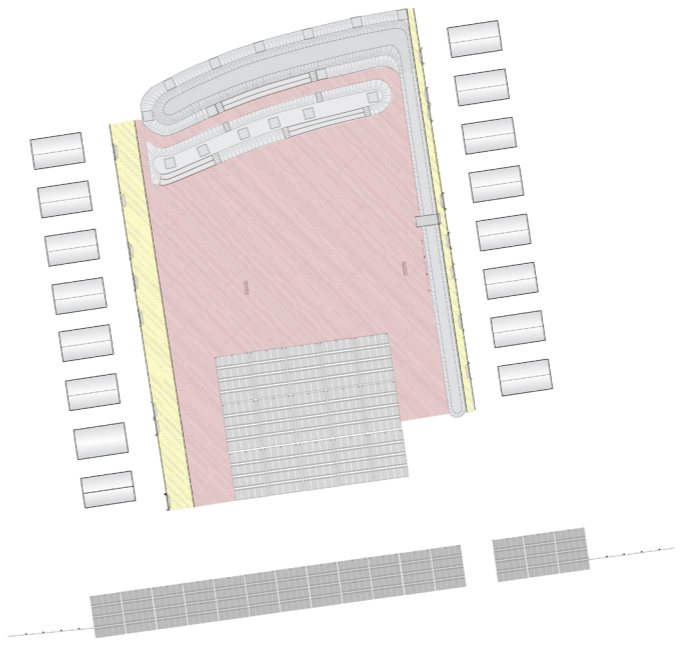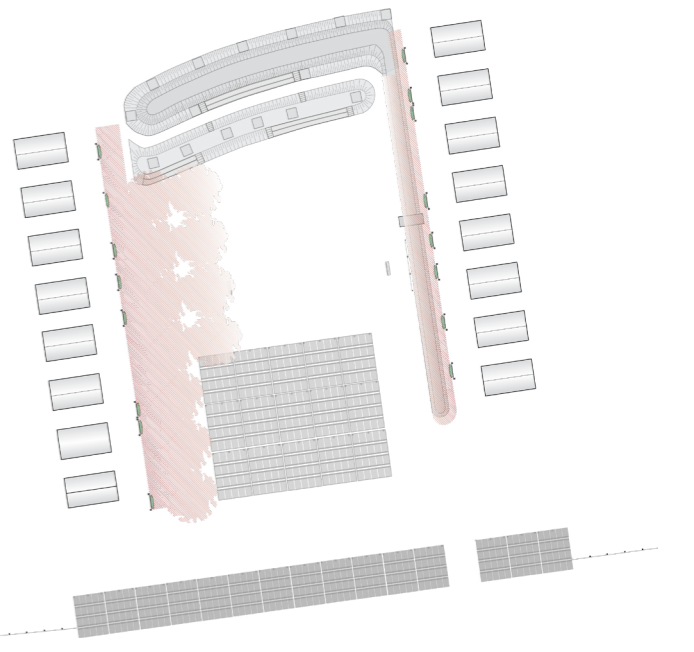

Principle 4 | public-private buffer zones
To enhance a feel of safety and reduce nuisance, a buffer zone between the private parcels surrounding the shelters and the public square should be made. In this case, a street and a tree-lane (inviting for more tranquil type of activities), and a height difference in the form of a wadi are used to do this.

Principle 1 | different lengths of lines of sight
In order to create a sense of an enclosed square where people feel comfortable to reside and deploy different kinds of activities (spatial self-determination), the 'middle-square' is clearly bordered of. However, some variation should be made, to invite (children) and people to (play) and walk around, for instance by using tree lanes and height differences. Last, at least one shaded area on the square should have overview, for example for parents to keep an eye on their children, thereby creating a safe environment for all groups to reside.
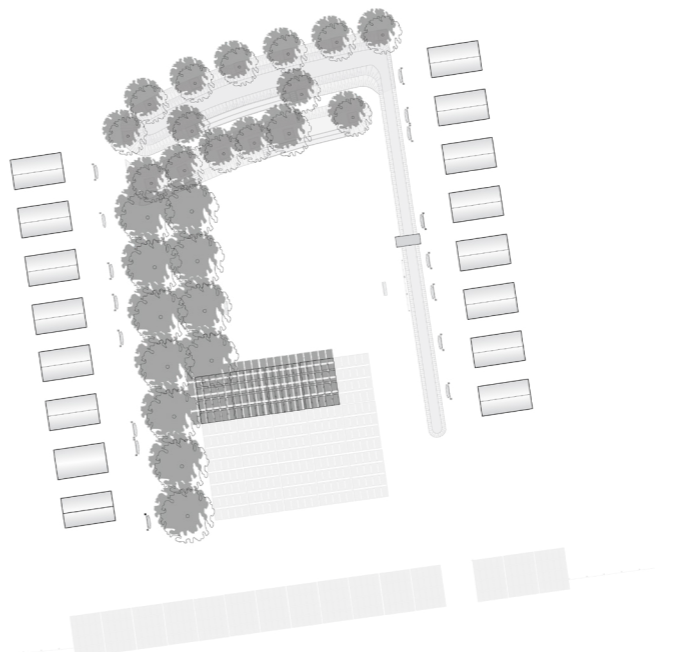
Principle 2 | creating areas with different characters
A public square should have several areas with a different character to invite different types of usage, thereby enhancing spatial self-determination and circulation of people which in turn enhances (informal) economic activity around occasional (work) shop facilities. This can be done by using different types of elements such as height differences including build-in benches, trees (in water tanks) with fixed benches, a PV-canopy and an open space with, for instance football-goals.

Principle 5 | providing shade
On the square, both trees are planted (in water-tanks) and PV-canopies are erected to provide for shade. This makes it more safe and comfortable to use the square and to reside there, fostering different uses of the space thereby enabling spatial self-determination.
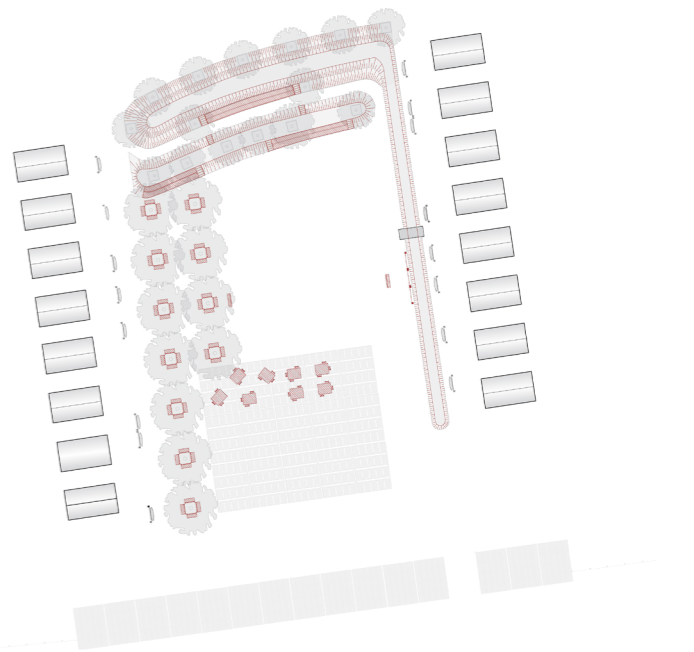
Principle 6 | providing elements for different usages
On the square, different elements are used to invite for different usages. These include (fixed) benches and furniture to picknick, sit and meet people, sports equipment (e.g. football goals), dug in benches for picknicking, watching a game or keeping an eye on one's children and height difference on ground level including wadi's to invite people to sit and play there.
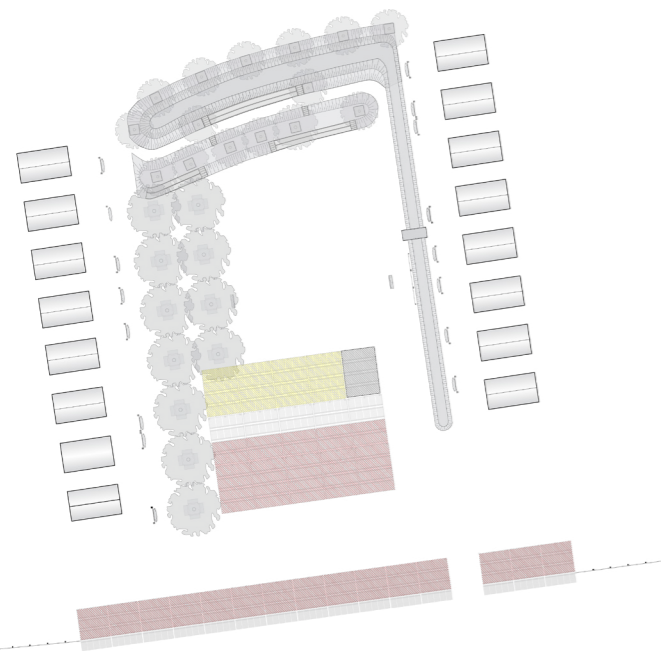
Principle 7 | different functions at the square
Besides a place where people can stay in the shade, overviewing the square, the PV-canopy also houses a storage facility (in grey) to store equipment to use on the square (e.g. sports equipment, furniture, a movie projector) to enable and encourage different activities. Next to this, also space for (work) shops is provided to enhance (informal) economic activity. Last, at the southern side of the square, space for more (market-type) shops is provided in the form of an open structure with PV-panels on top generating electricity, to enable and enhance (economic) interaction with local residents.
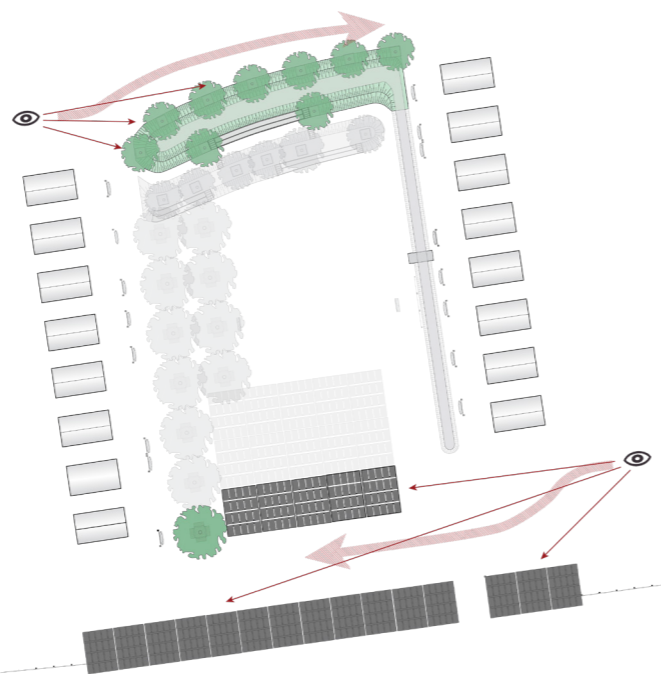
Principle 8 | striking borders
On both the northern and southern side of the square, clear striking elements (trees, plants, a wadi and a solar canopy structure) are placed that redirect the road by bridging an already existing difference in position of the adjacent community-blocks. In this way, the square clearly stands-out for by-passers, creating a characteristical place and inviting people to go there (enhancing both spatial self-determination and (informal) economic activity).

ZOOM-IN 3 | CAMP GENERATOR

Design for Camp Generator

First, the design intervention itself and how it evolves through the phases will be elaborated upon. After this, the design principles out of which the design itself is constructed will be discussed.

For each phase, a map is provided showing the lay-out of the 'camp generator' in that particular phase. In the third and final phase, a section and impression are added.

Phase 1 | Emergency Phase

As discussed above, in this phase only one hall is constructed covered with PV-panels generating electricity and providing weather protection (see Figure 6.42). The hall is constructed in the same way as the PV-structures in the communal area's, however, the columns are made longer, increasing the overall height. In the first phase this hall is used as distribution hall. Later, it will be reused as plant market where people can 'buy' material for the communal areas by using special vouchers. At the same time, trees in tanks (see Figure 6.43) with fixed benches are placed both north and south of the existing sports field providing shade and inviting people to resided there and for instance watch their children play. Next to this, these tree rows form clearly visible elements marking the place for by-passers. Last, south of the existing main school building, a pair of trees is planted (in water tanks) and several playing elements are placed to create some sort of school playground.
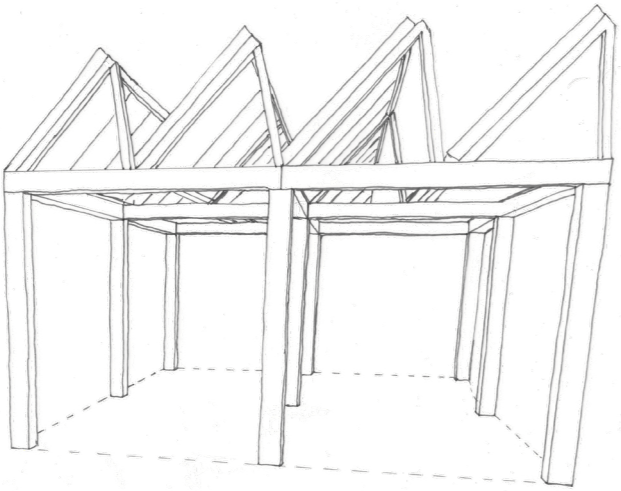
Figure 6.42, PV-Canopy (5x4x3m)
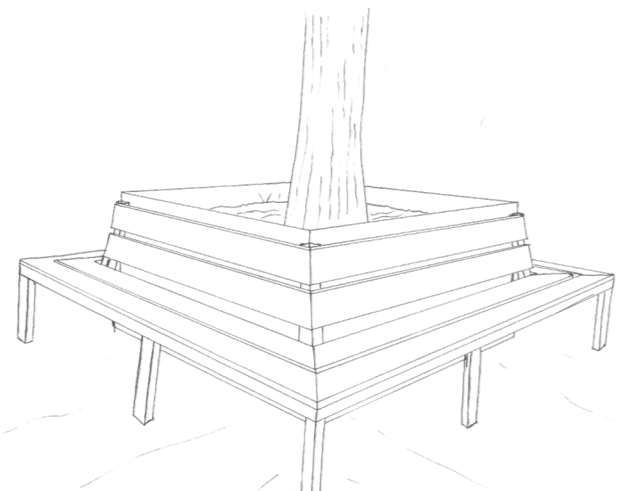
Figure 6.43, water tanks with fixed bench (2x2x0.8m)

Legend

Road

Gravel foundation

Public Square area

Shelters

Bathroom

Tree in water tank with fixed benches

PV-covered hall

0 6 months — 2 years — 20 years

scale: 1:500

0 5 10   25 m
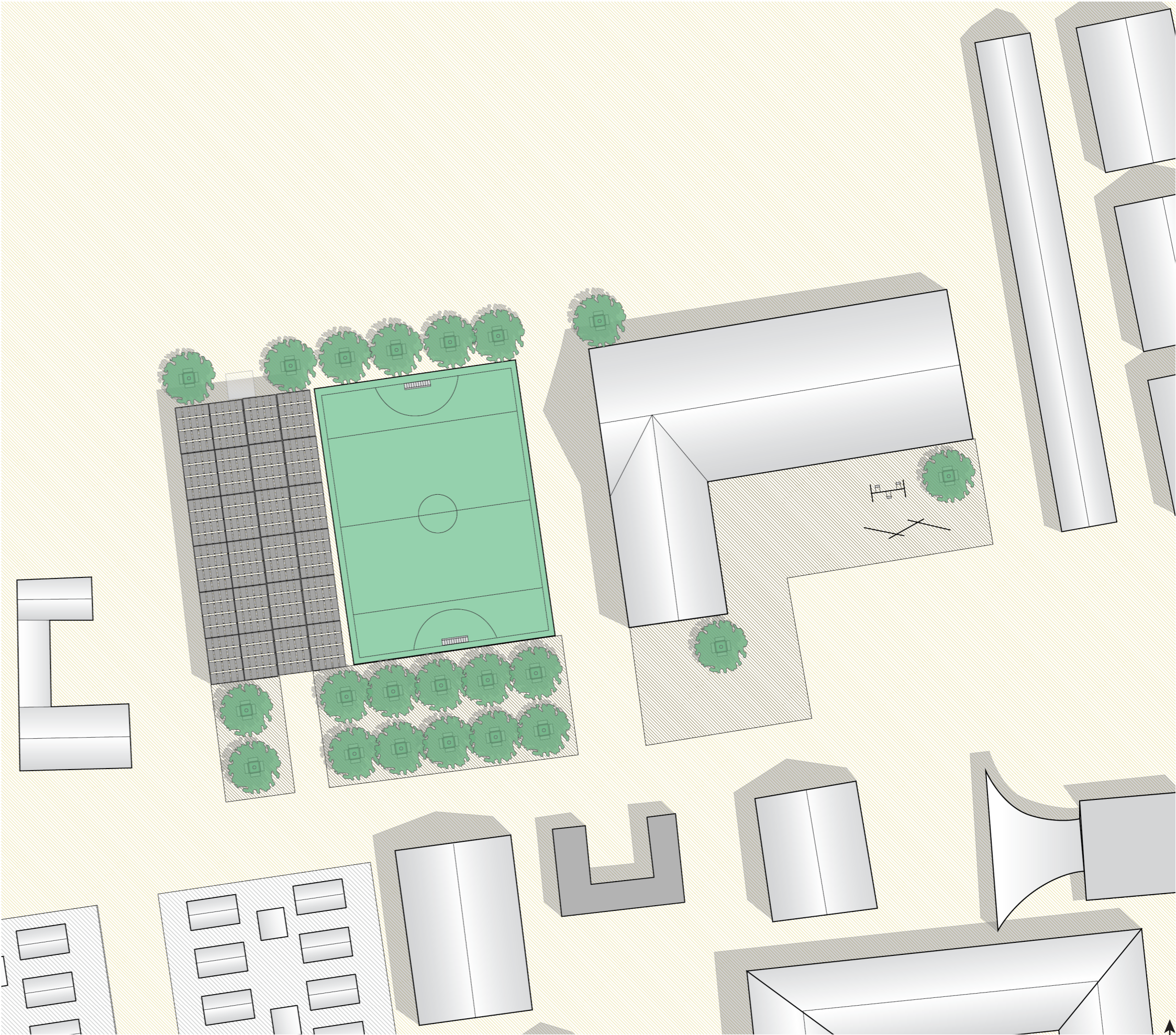
Phase 2 | Transition Phase
In the second phase, two extra halls with a
canopy of PV-panels are placed. These are
market halls of which the most northern one
is foremost focused household equipment and
others, and the southeast hall is mainly focused
on food. In these capacities, all three halls create
space for (informal) economic activity. The PV-
panels on the roofs generate electricity. Besides,
playing elements are added to the schoolyard,
such as the small football goals (see Figure 6.44)
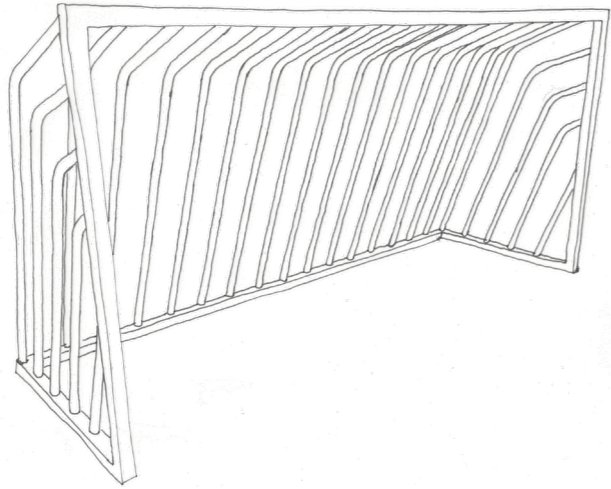
Figure 6.44, small football goals (2.5x0.8x1.5m)

Legend

	Road
	Gravel foundation
	Public Square area
	Shelters
	Bathroom
	Informal shelter structures
	Gasholder
	Tree in water tank with fixed benches
	PV-covered hall

0 6 months   2 years   20 years

scale: 1:500

0   5   10   25 m

DESIGN | CAMP CENTER
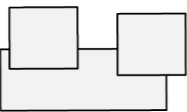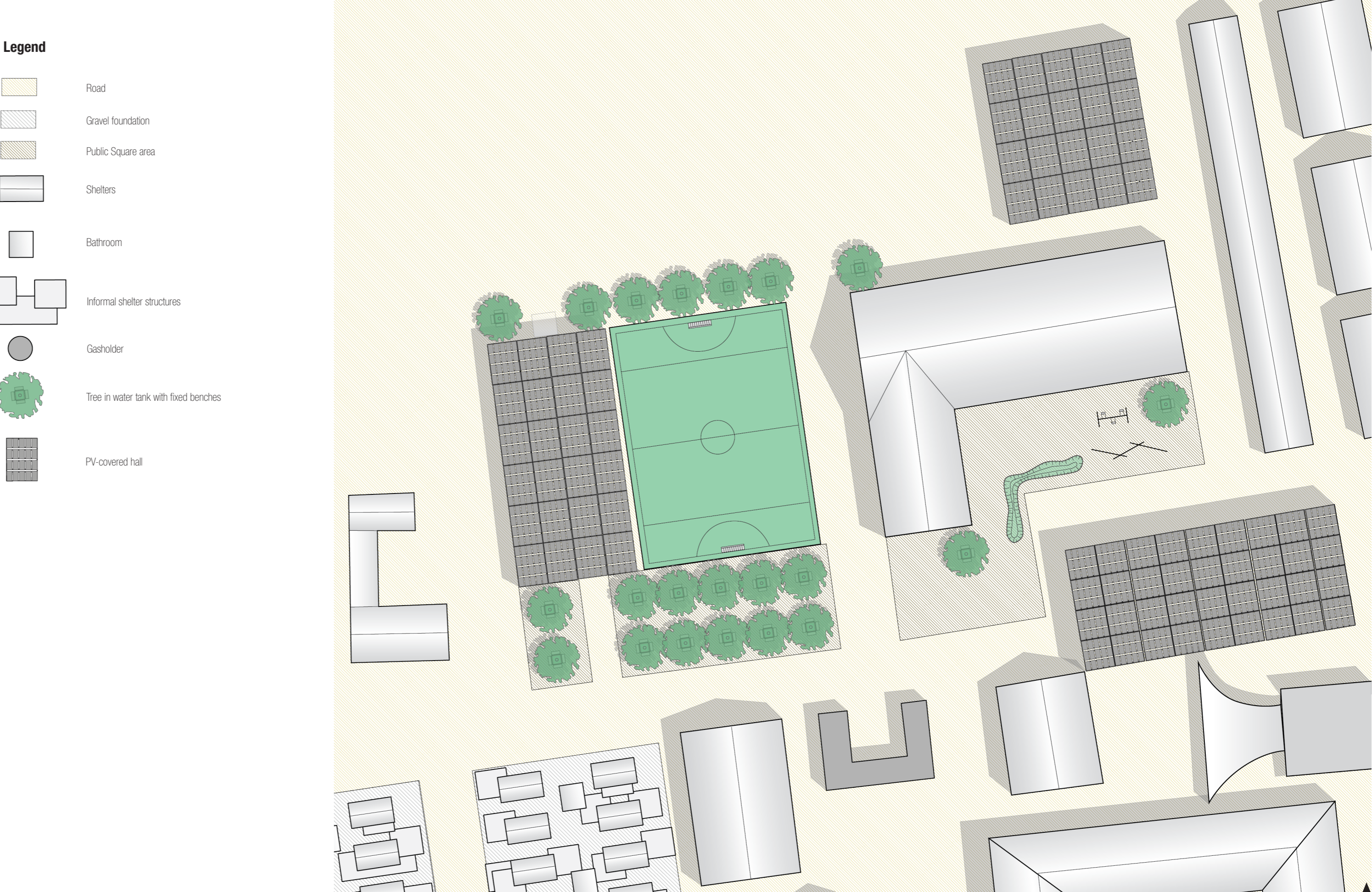
Phase 3 | Post Emergency Phase

In the last phase, all market halls are connected to each other by a 'solar canopy'. This canopy is constructed in the same way as the market halls and the PV-structures in the communal areas (see Figure 6.45). It provides shade and generates electricity. Next to this, it serves as a covered street with space for a walkway of 3 m wide and space for small (work-)shops on either side thereby providing space for (informal) economic activity. The parts that are most narrow only provide a covered walking path. These structures are arranged in such a way, that there are multiple entrances and several corners along the way, allowing different parts to have different characters thereby creating more interesting and inviting spaces. Next to this, the covered streets also create a border towards the playground of the school thereby making this space more clearly defined.
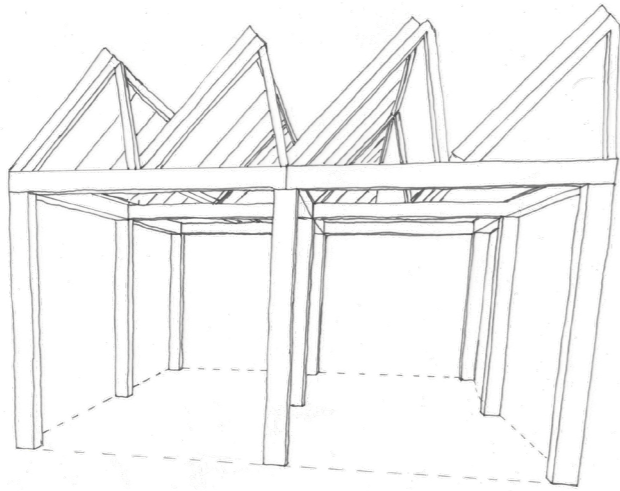
Figure 6.45, PV-Canopy (5x4x3m)

view 1

0 6 months   2 years   20 years

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The case of UNHCR refugee camps

PHASE 3 | POST EMERGENCY PHASE

Legend

Road	Tree in water tank with fixed benches
Gravel foundation	PV-covered hall
Public Square area	PV-structure
Shelters	
Bathroom	
Informal shelter structures	
Gasholder	

view 1

scale: 1:500

0   5   10   25 m

Design Exploration

DESIGN PRINCIPLES | CAMP GENERATOR

Design principles
As illustrated above, there are seven conceptual
principles that need to be met in order for the
design to function or, in other words, enhance
(informal) economic activity and/or spatial self-
determination. These principles are based on the
findings presented in Chapter 5.
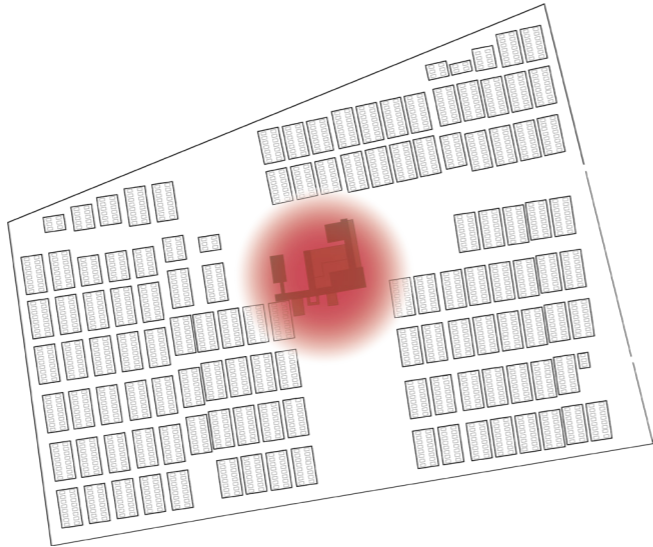
Principle 1 | central position
A bazaar type of structure including functions such
as shops, workshops, services, education, sports and
distribution, should be placed in a central position
within the camp to ensure easy and fair (regarding
walking distance) access for all camp inhabitants. By
doing this, more people will use the facilities thereby
fostering (informal) economic activity. Besides, this
will enhance the feeling of a clear center, adding
character and normalcy (since it increasingly resembles
a town without adding permanency) to the camp.

Principle 4 | difference in building heights
The market halls have a higher ceiling than the
'streets' that connect them. This creates a clear sense
of different spaces when moving through the center.
This makes the structure overall more interesting to
reside, therefore enhancing ((informal) economic)
activity.

Principle 5 | different lines of sight
The different directions of the 'streets', the corners and
the passages from and towards the market halls create
vistas and different lengths of view lines. This, in turn,
enhances a sense of place which makes it more natural
to reside there.

Principle 2 | different routes and entrances
By creating several multiple entrances of varying
scales, various parts get different characters, different
routes of traffic are stimulated creating various stimuli.
This makes it a more interesting place to be which
invites people to come here, enhancing (informal)
economic activity. This effect is strengthened by
internal entrances towards diverse functions, including
a school, NGO-offices and market-halls. Last, several
walls are opened to courtyard-type places creating a
porous border and thereby enhancing interaction with
'resting places'.

Principle 3 | different functions
Different functions including NGO-offices, a school,
market-halls a distribution-hall and a sports field are
connected to each other by a bazaar-type structure.
This structure consists of a street with place for (work)
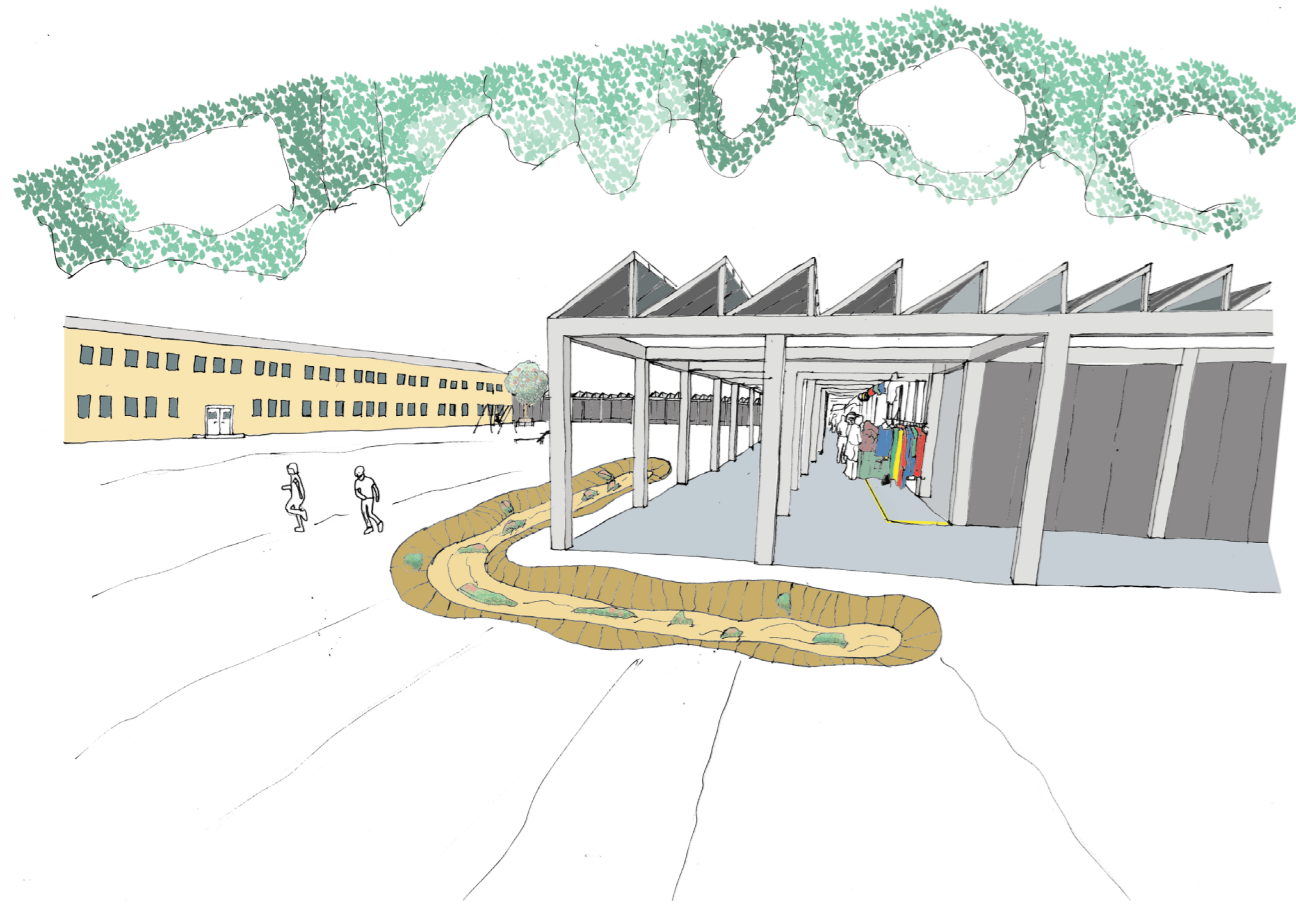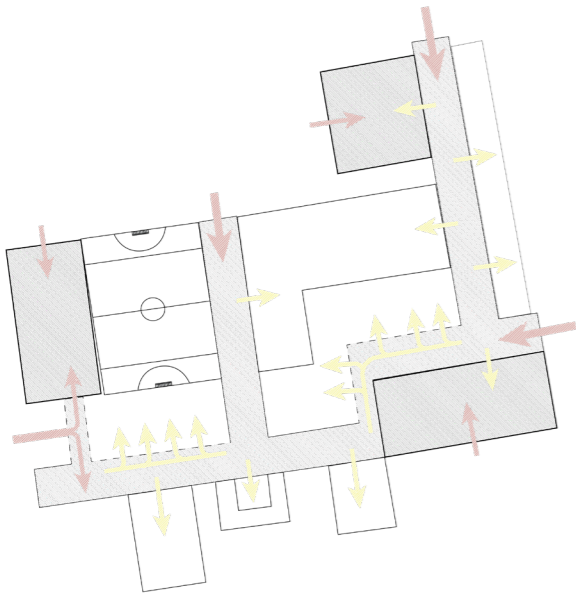shops (in red) alongside it, which is covered by a
canopy of PV-panels protecting from the weather
and generating electricity. The market halls, have a
centralized set-up with an open space in the middle
and (work)shops surrounding this, forming three
central places within the general structure.

Principle 6 | roof lights
Since the PV-panels are placed in an angle towards the
south, there is space for windows facing north in the
roof. This and windows bridging the height difference
between the halls and the 'streets', create natural
lighting inside. This makes the place more natural to
reside which increases the number of people, thereby
enhancing (informal) economic activity.
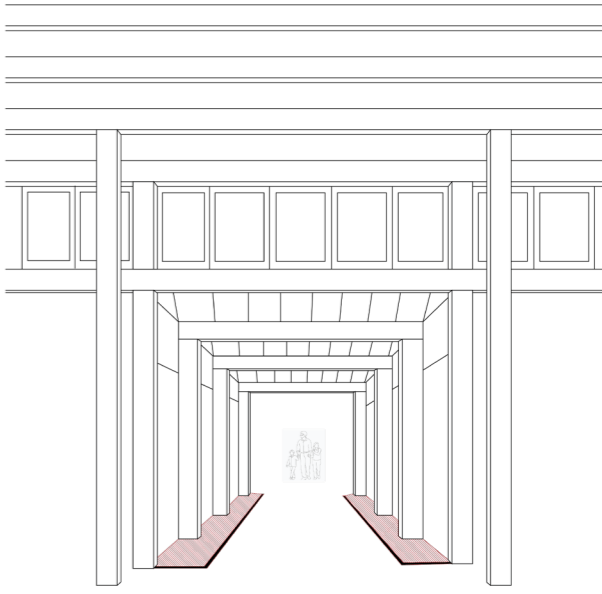
Principle 7 | private-public transition zones
By placing lines on the ground 1 meter outside the
(work)shops, a zone is created where (work)shop
owners can place commodities. This makes it a place
of spatial self-determination for the (work)shop
owners and it adds character to the public area.

6.3 Interfaces and Mutual Integration

As pointed out a number of times above, there are several parts of the flow-related interventions and the spatial interventions that have communal interfaces or that are even integrated in one another. These interfaces and the interventions that can be integrated are discussed in the sub-sections below per phase. On the following spread, a timeline of all major interventions is presented. In this timeline, the planning of all interventions are plotted against one another to create an overview.

Phase 1 | Emergency Phase

As discussed in section 6.2 on spatial interventions, a distribution hall for food and basic shelter-related necessities is constructed which will later form a part of the 'Camp Generator'. This hall will also be used as main distribution point for the LPG-cooking fuel distribution.

Phase 2 | Transition Phase

As discussed in section 6.1 on flow-related interventions, from the second phase on, sewage sludge will be used to form both biogas and vertilizer. Besides selling this vertilizer, part of it will also be used for the green ammenities at the 'Public Square' and the 'Camp Generator' sites. Next to this, fertilizer will be distributed among the 'community duo-blocks' to fertilize green in the communal areas.

Also rainwater and grey-water, wich will be collected from phase two onwards will be used to provide water for all green ammenities in the camp starting at communal area-level.

Last, savings that are made by self-producing biogas and selling recycled materials can be used to introduce a system of 'Green-vouchers' (see Figure 6.46). In this system, camp management uses the saved money to buy different types of plants (that are adjusted to the local climate) gardening equipment and garden-materials (e.g. chairs and tables that can be used outside). At the same time, so-called 'Green-vouchers' will be evenly distributed each month among both households and the councils of all 'duo-block

communities' in the camp. These vouchers can then be used to 'buy' materials for the communal areas and the private parcels at the central green market hall. In this way, both (informal) economic activity and spatial self-determination is campwide enhanced.

Phase 3 | Post Emergency Phase

As elaborated upon in section 6.1 on flow-related interventions, all electricity used in the camp should be self-produced. This goal is reached by placing PV-panels on the roofs of all structures that are built in the context of the spatial interventions. In this way, besides generating electricity, these PV-panels also protect from the weather by proving shade and cover.

By using savings by self-producing all electricity needs of the camp, the 'Green-voucher system' is further built out in the third phase. Besides this, money saved in this way can be used for (micro-) investments, to improve general campfacilities and to buy, for instance, sports- and other equipment to be used at the 'Public square' thereby further enhancing spatial self-determination.

UNHCR invests profits from biogas and electricity production in tools, plants and furniture

Green-vouchers can be used to 'buy' materials for in the communal areas and private parcels

green market

household

duo community block-council
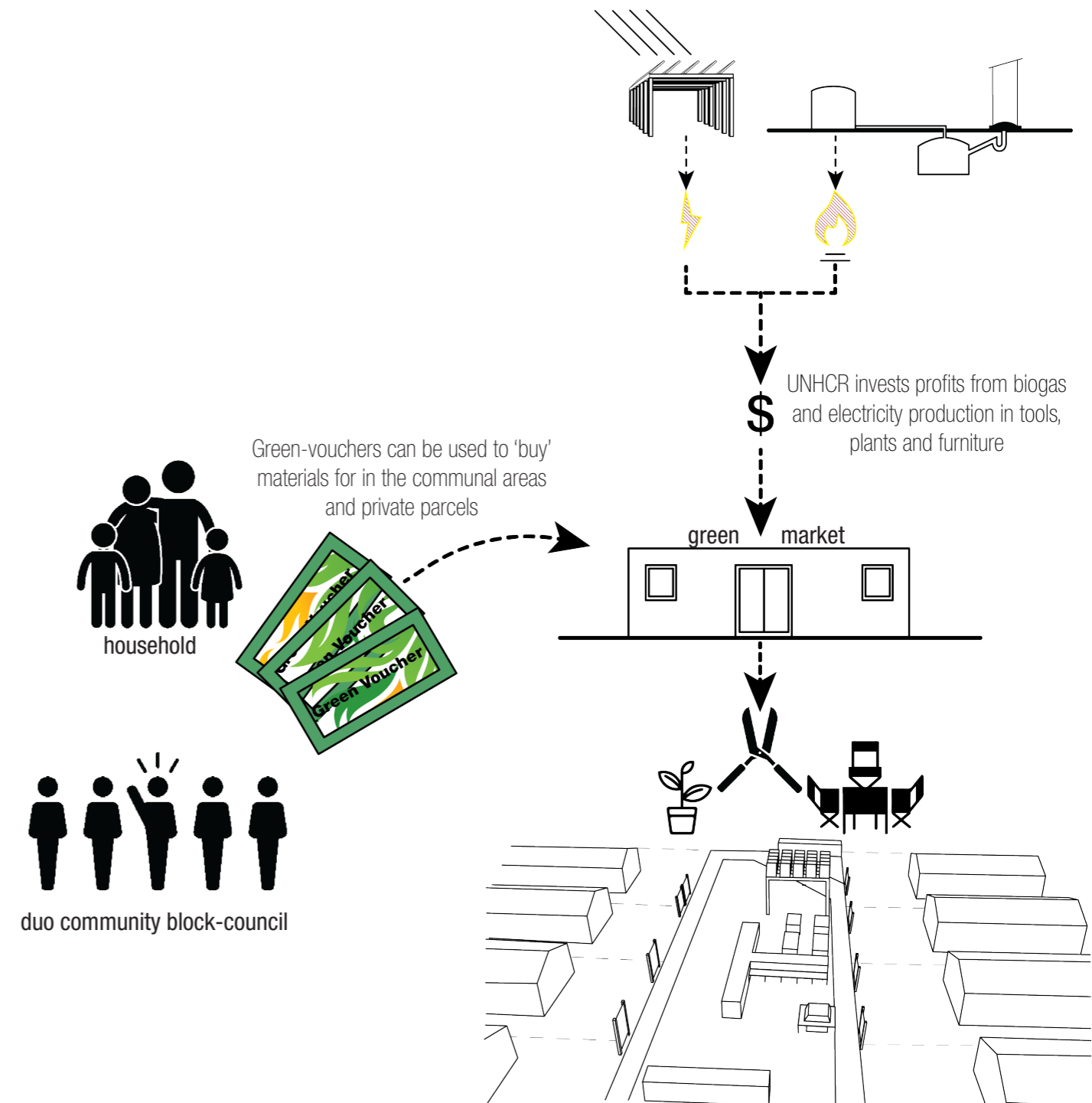
Figure 6.46, the Green-voucher system

TIMELINE | INTERVENTIONS

flow related interventions

WATER   camp establishment   6 months   2 years

establish waterpoints

install waternet

install grey water gravel infiltration pits

grey water re-use

RAINWATER

rainwater use

ELECTRICITY

install electricity net

self-produce electricity

SEWAGE SLUDGE AND COOKING FUEL

collect sewage sludge and process outside camp

distribute LPG

generate biogas and fertilizer

SOLID WASTE

set up collection and central storage

collect and recycle materials

spatial interventions

COMMUNAL AREA

distribute growframes

install greenfilled water tanks

provide watertanks for self-structuring

install pv-strucutures

PUBLIC SQUARE

construct northern wadi including greenery

install tree rows in water tanks

place football goals

construct further heighdifferences

construct storage building

construct pv-structures at square and along fence

CAMP GENERATOR

construct food distribution hall

construct two market/workshop halls

construct pv-canopy over walkingroute

place trees in water tanks

improve schoolyard

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps

Design Exploration

MATRIX | INTERVENTIONS

Scales	Phase 1	Phase 2	Phase 3
community scale (80 persons)	distributing growing frames	installing plantbeds, treebeds, benches, irrigationsystem, rainwater collection system, plants, trees and pavement; distributing materials	installing PV-structures
		installing a rainwater collection system	
		biogas production by installing bioreactors, piping and gasholders	
block scale (1250 persons)	installing growframes, digging and planting a wadi, install trees in plantbeds with fixed benches and place football goals	create earth wall with build in bench, finish wadi and planting and construct storage building	installing PV-panels (on larger structures) finalize PV-covered structures on the Public Square and along the fence
sector scale (5000 persons)	set up LPG distribution system		
camp scale (>5000 persons)	installing waterpumps and waterpoints	installing a waternet	
	install grey water infiltration pits	install grey water collection and filtering system	
	solid waste collection	solid waste collection and recycling	
		processing remaining sewage sludge in drying beds, mingling it with earth and distributing/selling it as vertilizer	
		installing electra net	
	construct first main PV covered hall and place trees in plantbeds with fixed benches	construct two remaining PV covered halls and finalize schoolyard	construct PV covered walking routes connecting the halls implement the Green-Voucher Project

In this matrix, all interventions are briefly explained. The matrix structures all interventions along two axes: the scale on which an intervention has its effect or on which it operates and the three phases during which the interventions are implemented. All interventions are modular, except for the interventions using the same colorschemes. These are dependend on one another and therefore have to be implemented together.

Camp Generator

Public Square

Communal Area

Water pumps and water-towers

Dislodging of Greywater sceptic tank

Earth excavation

Drying-Bed

Private parcells with maximum spatial freedom

Gasholders

Electricity cables

Recycle centre and containerized WWTP

6.4 Future Scenarios

With regards to refugee camps, there are four main scenarios of what could happen to the camp throughout time, see sub-sections below. To make a feasible, durable and (other-actors-) convincing strategy, interventions should function and keep a certain value in each of these four scenarios or should be easily removable. In this section, the evolution of one intervention (implemetation of the waternet) is illustrated throughout these four scenarios in Qushtapa Refugee Camp. In these scenarios, two possible developments are included: camp ground that is transformed into agricultural land and camp ground that evolves into an urban environment. In each sub-section, it is explained how this specific intervention would function in each scenario and how it would still enhance (informal) economic activity and/or spatial self-determination. As discussed in previous sections, self-determination and therefore dignity will be enhanced in this graduation project in two ways, by fostering (spatial) self-determination and (informal) economic activity. However, for these interventions to have effect, it is also important that the so-called first needs are met (see Chapter 2). This intervention proposal, of implementing a water net, will support all three facets. First of all, it will provide water to all shelters and amenities. Next to facilitating shops, markets and other enterprises, the managing and maintaining of this net will also create job-opportunities within the camp. The net is set up along the east-west axis of the camp. All piping is located on existing routes to create access for maintenance. As can be seen on the "zero-scenario" map, the main pipes are alternately laid down along the (broader) east-west routes. So-called 'sub-piping', which are positioned on the (narrower) north-south routes, connects the shelters to the waternet. These 'sub-pipes' are led down on every second or third road, depending on the direct spatial context. In this way a grid is created of 130m x 90m and of 130m x 60m. These grid sizes are more efficient and will provide more room for potential agricultural and/or urban developments in the future. The size of this grid is based on the structure of the (former)

scenario 1 "zero-scenario"
In the "zere-scenario", the number of inhabitants stay roughly the same.

scenario 2 "camp scales down"
In this scenario, the number of inhabitants significantly decreases over a certain period of time.

scenario 3 "camp grows"
In this scenario, the number of inhabitants grow significantly over a certain period of time.

scenario 4 "camp is closed"
In this scenario, the camp is completely closed and all inhabitants left the area.

Figure 6.47, four scenario's for refugee camps

camp, in which the water net has to fit, and a grid size which is known to be efficient and which provides room for different urban developments and therefore spatial self-determination. In figures 6.48 and 6.49, examples of urban grids are presented that have a comparable size and that can house different population densities and degrees of urbanization. In this way, the water net enables future spatial self-determination by forcing future developments to provide room for this. To also function in the current grid of 60m x 25m, several temporary pipe-lines are installed, that will lay above the ground.

On the following pages, the implementation and its functioning with regards to the four scenarios are illustrated and elaborated upon.
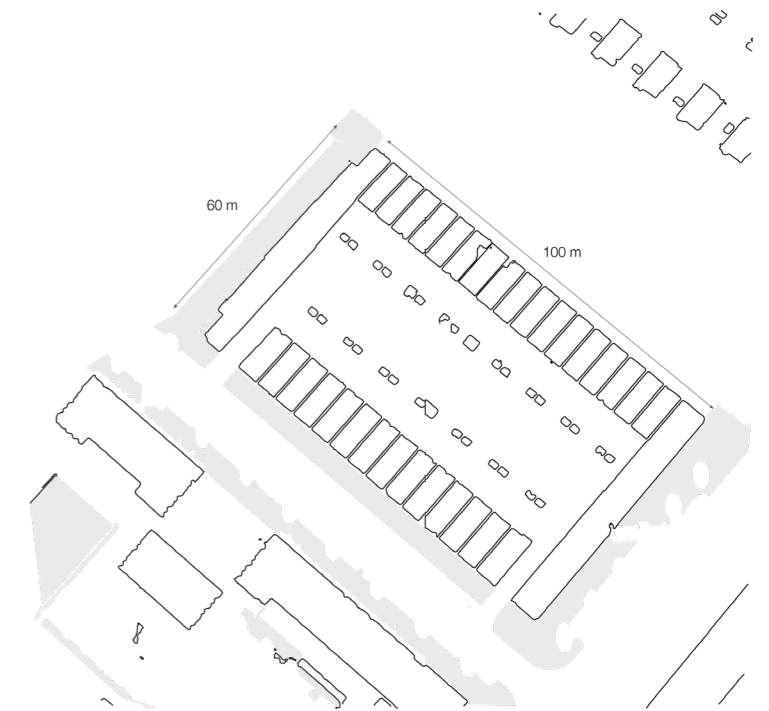
Figure 6.48, block in IJburg, Amsterdam
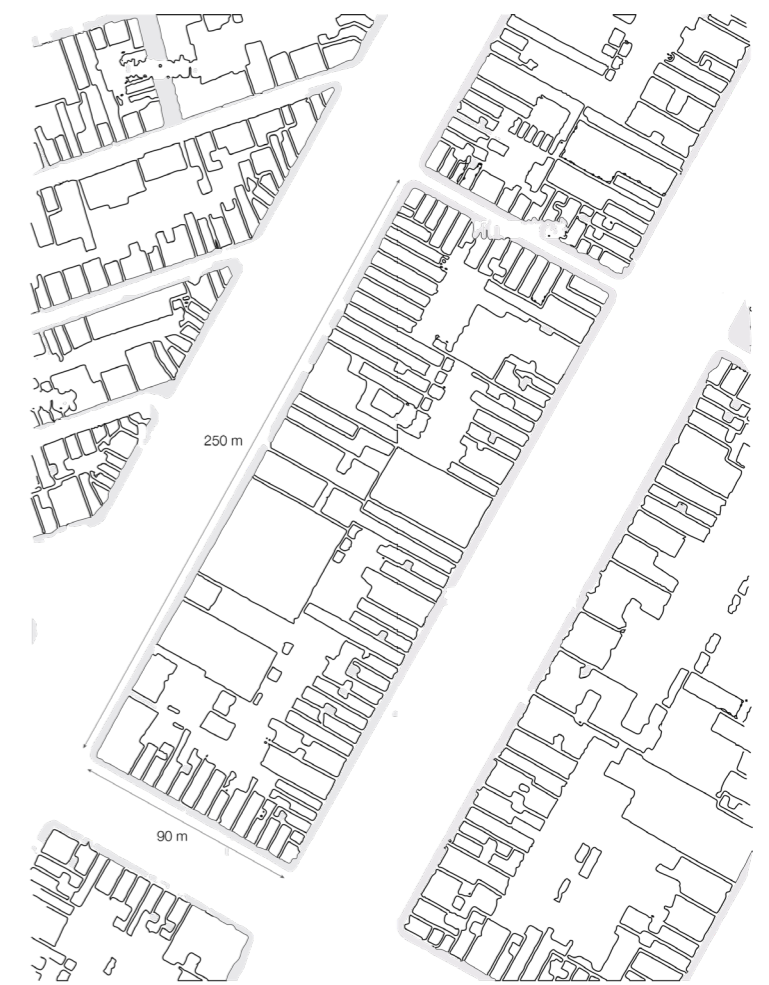
Figure 6.49, block at the Keizersgracht, Amsterdam

SCENARIO 1 | ZERO-SCENARIO

Scenario 1 | Zero-Scenario
In this scenario, the size and shape of the camp stay the same. The water net functions in the same way as when it was installed, providing both shelters and amenities with water. In the southern part of the camp, a main pipeline is led next to the camp perimeter. From here on, the existing local settlements can also be connected to the water net.

Legend

Shelters		Wash center for cloths	
External roads		Water provision point	
External buildings		Main waterpipe	
Gravel road		Sub-waterpipe	
Camp perimeter		Temporary above ground waterpipe	

scale: 1:7000

70

0   350 m

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps
Design Exploration

SCENARIO 2 | CAMP SCALES DOWN

Scenario 2 | Camp Scales Down

In this scenario, the number of inhabitants of the camp decreases and the camp itself scales down. To illustrate this phenomenon, it is assumed that around 1/3 of the inhabitants left the camp and that the western part of the camp is broken down. This area is turned into agricultural land (the same function as the surrounding land). The pipelines remain in the ground and are now used to connect irrigation systems. The size of the fields is based on the grid of the water net and is 120m x 60m if the pipelines are not further extended. In this way, the investment in a pipeline keeps its value, also in the case of a downsizing camp.

60 m

120 m

Legend

Shelters	Wash center for cloths		
External roads	Water provision point		
External buildings	Main waterpipe		
Gravel road	Sub-waterpipe		
Camp perimeter	Temporary above ground waterpipe		

scale: 1:7000

70

0   350 m

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps
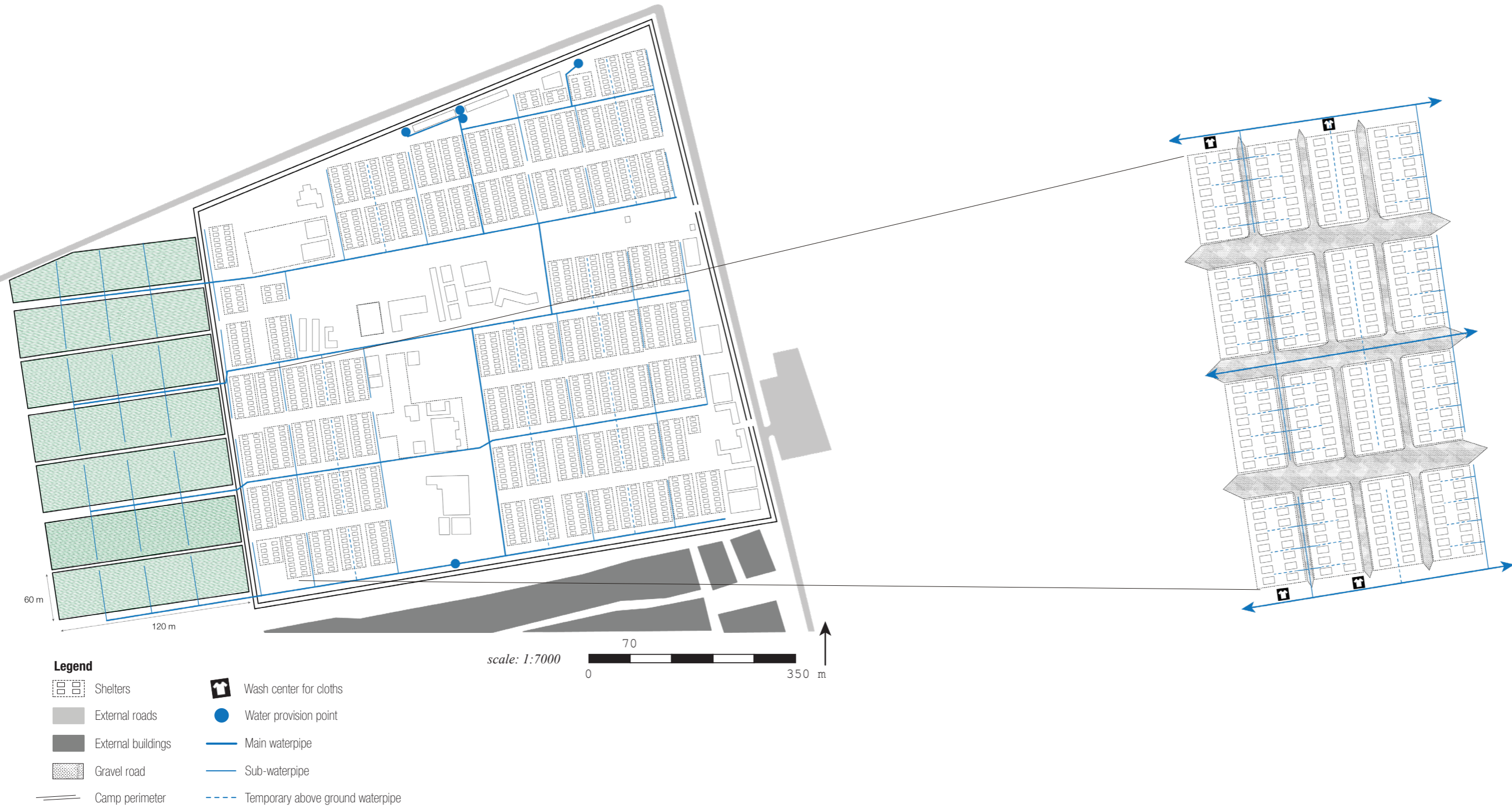
SCENARIO 3 | CAMP GROWS

Scenario 3 | Camp Grows

In the case of increasing numbers of inhabitants, the existing water net is extended using the same grid. In this example around 560 extra shelter units, amounting to about 2800 extra inhabitants, are added to the camp, using the same structure/ grid of communities of 60m x 25m. In Qushtapa, an extension like this can only be made in the western direction, since this is the 'free' border of the camp. The other sides are demarcated by roads or existing urban settlements. By using a simple grid and existing waterpoints, an extension of the existing water net can be made with a relatively small extra investment.

scale: 1:7000

Legend

Shelters		Wash center for cloths	
External roads		Water provision point	
External buildings		Main waterpipe	
Gravel road		Sub-waterpipe	
Camp perimeter		Temporary above ground waterpipe	

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps

Design Exploration
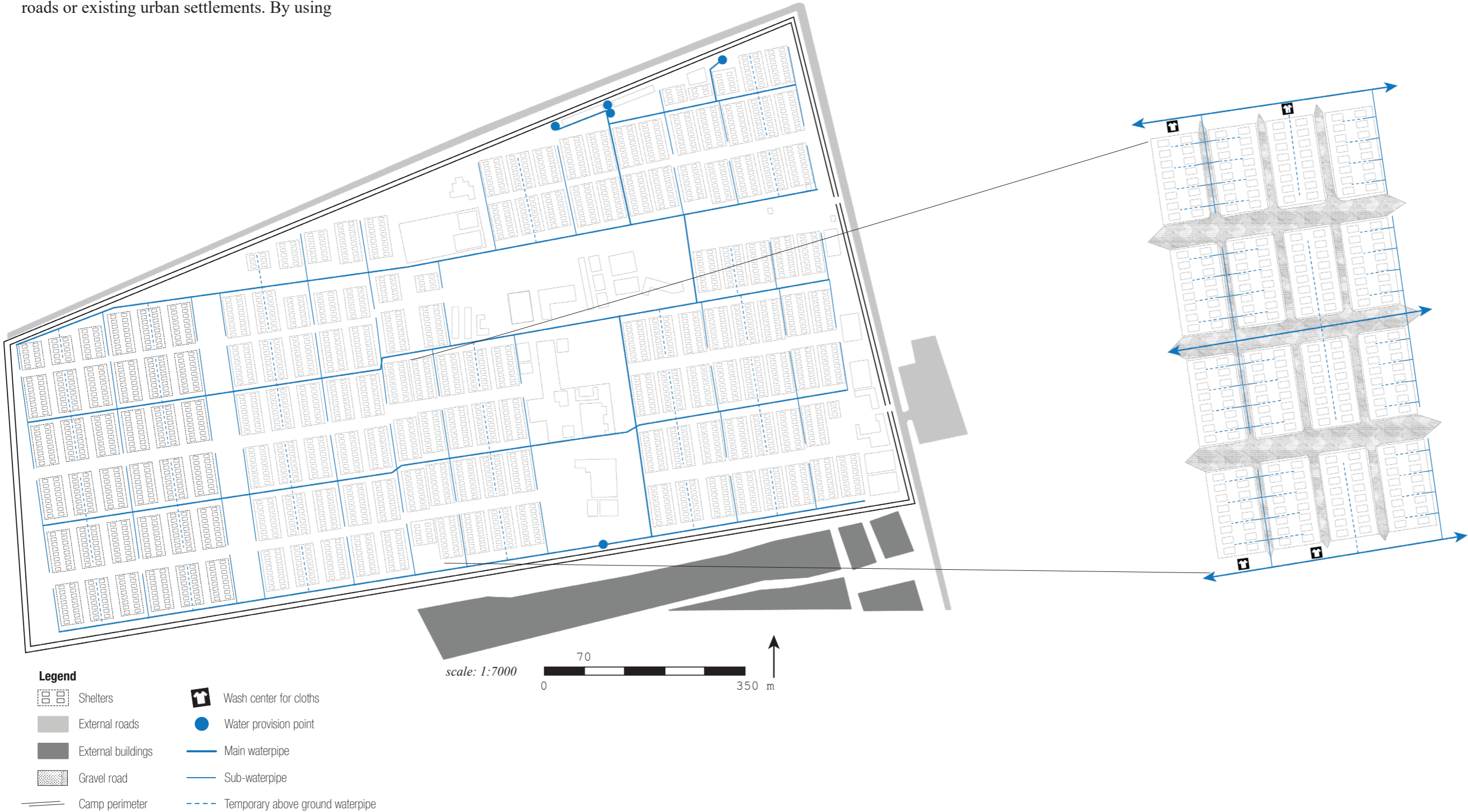
SCENARIO 4 | CAMP IS CLOSED

Scenario 4 | Camp is Closed

In this scenario, all inhabitants left or are naturalized. In this example we assume that the former camp-site is integrated into the existing urban structures of the village of Qushtapa. As discussed in the first paragraph of this section, the structure of the water net forces the urban developments on the former camp-site to be in a grid of either 130m x 90m or 130m x 60m. With only very little adaption, the existing water net can be used to provide the new functions with

water. This means that also in the case of the camp transforming into an urbanized area, the original investments keep their value.

130 m

90 m

Legend

	Shelters		Wash center for cloths
	External roads	●	Water provision point
	External buildings	——	Main waterpipe
	Gravel road	—	Sub-waterpipe
	Camp perimeter	- - -	Temporary above ground waterpipe

scale: 1:7000

70

0   350 m

7

ASSESSMENT

This assessment will elaborate on three sub-questions that will support the effort to discuss how realistic the proposed interventions are. The questions are as follows:

1) "Are the proposed interventions realistic with regard to the materials that are needed to implement them and why?"

2) "Are the proposed interventions realistic with regard to the labor force that is needed to implement them and why?"

3) "How do the proposed interventions fit in the existing UNHCR-Mandate and UNHCR standards?"

After treating these questions, three experts are interviewed to discuss their comments on the proposed interventions, they are Kilian Kleinschmidt, Wilko Koning and Hans van der Made. They represent, respectively, the UNHCR/camp management perspective, the technical and flow related perspective and the designer perspective. In the following five sections, which are divided in two to handle both perspectives, the three questions will be treated. The fourth section will elaborate on the feedback of the three interviewed experts. The last section will conclude, by briefly discussing the different interventions and how realistic their implementations are, thereby also elaborating on which interventions can easily be implemented and which are more difficult. For academic underpinning of the practices described, please see the Introduction and Chapter 4 on current practices.

7.1 Implementation in Relation to Materials

Flow-Related Interventions

In this sub-section, the same order to discuss the different flows will be used as in the section on flows in Chapter 6. Regarding the provision of drinking water, several materials are needed including pumps to be installed in water wells, water towers to store the water and to create pressure on the system, piping for transport and tabs to get the water. The last three are relatively simple, cheap and widely available. Water pumps to be used in water wells may be more technically advanced and therefore more difficult to obtain. However, without water there is no live and without water pumps the water has to be trucked in or a connection must be led to an existing network which is, respectively, even more expensive or simply impossible. Therefore, it is deemed that that all materials regarding the provision of water are relatively easy to obtain

and that for water pump, depending on the situation, more resources are needed or that they have to be flown in.

With regard to the processing of grey-water, in the first phase, only piping, and gravel is needed. These are both very easy to obtain. From the second phase on, also water tanks, vacuum trucks and a containerized washing installation are needed. Watertanks are cheap and widely available, however, vacuum trucks and a washing installation may be more difficult to obtain. Depending on the situation and location of the camp, foreign help may be needed to acquire these.

Regarding the collection of rainwater only simple, cheap and widely materials are needed, including gutters, piping, water tanks and drippers. Therefore, it is deemed that this implementation can be implemented in most if not all protracting (from phase 2 on) situations.

The second main flow-type is electricity. To connect every shelter to an electricity net will need a high amount of wiring and electric links. These materials are widely available, although the quantity needed in a camp might make it relatively expensive to implement. Secondly, self-generating all electricity using PV-panels, is even harder to accomplish. Although PV-panels are relatively widely available, buying the amount needed including all needed wiring and transformers is a huge investment that will only repay itself after several years. Therefore, to make a sensible cost benefit analysis, also for this intervention a realistic estimation of the lifetime of a camp has to be made. This would need an estimation method to estimate this.

The second main flow-type is the combination process of processing sewage sludge and creating biogas. In the first phase, these processes are still unconnected to each other. Regarding sewage sludge, this means that either a trench has to be dug or that piping and sceptic tanks have to be installed which are regularly emptied by vacuum trucks to be processed elsewhere. Obviously the second option is preferable since this creates less smell nuisance, pollution and health risks. However, as discussed above, acquiring vacuum trucks might be more difficult. Nevertheless, investing in vacuum trucks is probably viable in most situations, since they will also be needed for solutions presented for the second and third phase (see below) and some of them can be re-used after the first phase for the collection of grey-water. An investment strategy like this, however, would need an estimation system to estimate the probable lifetime of a camp.

The distribution of LPG as cooking fuel, can be handled in different ways, using different ways of transport (e.g. trucks and pushcarts). Therefore, this will be possible in any situation.

In the second and third phase, the processing of sewage sludge and the production of biogas as cooking fuel is combined to one process. This process might look relatively complex (see Figure 6.9), however, the materials needed for

this are relatively simple and easy to obtain, these include: sludge and gas piping, sceptic tanks, metal or plastic gasholders, vacuum trucks and Sulphur resistant stoves. Especially the last two are available but may be relatively expensive. Still, in protracted situations, the investment would repay itself.

Last, solid waste has to be collected (and recycled from the second phase on). To collect it, bins will be needed. These are cheap and easy to obtain. Next to this, collection will have to be done by trucks or handcarts. When a camp is expected to last longer than the first phase, investing in waste trucks might be sensible since this would greatly increase efficiency of the system due to their speed, loading capacity and user-friendliness. To recycle, a special building with outside space is needed to do this. Especially in a protracting situation, this is relatively easy and cheap to construct.

Spatial Interventions
On communal level, several elements are needed in relatively high quantities. First of all, (recycled) water tanks (1x1x1 m) are needed to function as plant beds. These are simple, cheap and widely available. To also fix benches to these, wooden building material is needed as well. Secondly, earth and plants are needed. Earth can be excavated from the location in question, plants and trees have to be bought locally via camp management. By using local species these will be available in most cases. To pay for them, money that is earned by recycling waste, generating electricity and self-producing cooking fuel will be used (see section 6.3). The same goes for gardening tools and furniture. Next to this, so-called growing frames are needed. These consist of reinforcement frames and (wooden) poles which are both cheap and widely available. However, regarding the PV-structures, it might be harder to obtain the right materials. The construction materials are relatively easy to acquire, however with regard to the PV-panels, the same obstructions apply as explained above.

When looking at the 'square-intervention', the

same materials and elements are needed as for the interventions at communal level. Also the large 'solar-canopy' and the PV-structures at the fence consist of the same PV-structures as used in the communal areas, but then linked together and with glass fixed under the PV-panels to ensure weather protection. All of this, to ensure the highest level of standardization possible. This enables camp management to buy 'in bulk' thereby reducing costs. For these, the same considerations apply. However, besides these 'basis' materials, several other materials including prefab concrete beams (for the build-in benches in the earth wall), soccer goals and a small fence (for behind the soccer goals) are needed. All of these are cheap and widely available.

The 'Camp Generator' interventions might by more difficult to implement. Although all the 'covered walking ways' connecting the 'market halls' are constructed by linking together the same PV-structures used in the other implementations, the 'market halls' themselves have to be higher and the construction has to span greater distances. Therefore, a heavier construction is needed, which might be more expensive. Also, a heavier foundation and inner walls are needed. This means that to construct the 'Camp Generator' extra effort and financial means are needed.

So, everything considered, most interventions seem realistic regarding the materials that are needed to implement them. However, for some interventions, investments have to be made that are only profitable when the camp exists for several years. Nonetheless, it should be noted that especially the more technical interventions (e.g. PV-structures) are modular and can therefore easily be re-used in case they are not needed anymore.

7.2 Implementation in Relation to Work Force

Flow-Related Interventions
As discussed above, and in Chapter 6, a water net including water well pumps, a water tower, piping and tabs will be implemented. To construct this system, specialist labor force is needed from outside the camp. Since water nets are relatively widely applied and this version is relatively simple, this will be possible in most situations. However, it might require a considerable financial investment, for which also other partners (e.g. NGO's and financial donors) may be needed.

Regarding the processing of grey water, constructing infiltration-pits (phase 1) is simple and can be done by an unskilled labor force, for instance camp inhabitants. To implement the system of grey-water collection and filtering, more specialized equipment is needed (vacuum trucks and a containerized water filter installation) (see previous section) of which both the instalment and operation need skilled employees. Regarding the operation of these systems, camp inhabitants could be educated. For the installation, probably outside workforce is needed who can also teach a team of future operatives how to run it.

With regards to the collection of rainwater, both the installation and maintenance of the systems required are simple and it is therefore expected that these can be executed by a (medium-skilled) workforce from the camp.

The second main flow that is considered is electricity. Both the installment of the electricity net, at the same time and using the same grid as the water net, as the installation of the PV-panels including all wiring and transformers, is specialist work. Therefore, it is expected that these will be executed by a (local) contractor. As discussed above, this might require a considerable financial investment for which NGO's and financial donors may be needed, thereby creating an obstacle. The running of this system, however, 'generates' money by

producing electricity (see section 6.1). Next to this, camp inhabitants can be educated to run and maintain the system, as is also done in Azraq and Zaatari Refugee Camps (Jordan) (UNHCR, 2018).

Sewage sludge can be processed in two ways during the first phase (see Chapter 4 on current practices and section 6.1). First of all, it can be directly buried in a trench, this trench can be dug by unskilled camp inhabitants. Installing sceptic tanks and dislodging them using vacuum trucks needs more skilled employees. These jobs can be executed by educating camp inhabitants. The distribution of the LPG-tanks as cooking fuel, can also be done by unskilled employees. During the second and third phase, a system will be implemented that combines the processing of sewage sludge and the generation of biogas as cooking fuel (see section 6.1). As elaborated upon in section 6.1, the construction of the bioreactors, piping and gasholders is relatively easy. Therefore, it is assumed that these can be executed by (medium-skilled) camp inhabitants after instructing them. Supervision of the project can be done by a local contractor or an NGO with experience with this kind of systems. With regard to the operation of the system, camp inhabitants will be educated to operate the vacuum trucks and maintain the system. This reduces costs and enhances economic activity in the camp.

Last, with regard to collecting and recycling (from phase 2 on) of solid waste, both skilled and unskilled employees are needed which can be recruited from the camp population.

Spatial Interventions
Most spatial interventions at communal level (see section 6.2), including preparation, placing and filling of the water tank plant beds, fixing of benches to these tanks, construction of the grow frames and construction of the pathways can be executed by unskilled laborers recruited from the camp population thereby enhancing (informal) economic activity. Construction of the PV-structures can, perhaps, also be done by camp inhabitants. However, for this probably a skilled

supervisor is needed. Last, the electrical wiring of the PV-structures might have to be done by a skilled electrician, thereby increasing costs.

Regarding interventions on 'square-level', the same applies. However, for digging the wadi's and constructing the earth walls, heavy equipment is needed which, including its operators, will have to be hired from outside the camp. This increases costs and the need for professional coordination. The same goes for the construction of the 'solar canopy' and the PV-structures along the fence, where a combination of skilled and unskilled workers will be employed, including electricians and supervisors. Maintenance of the square can be done by a team of camp inhabitants.
Except for the green related interventions, all the structures of the 'Camp Generator' design will have to be constructed by a combination of skilled and unskilled workers. As mentioned above, all 'covered walking ways' are constructed by linking the same PV-structures together as used for the other interventions, but then including glassing. The 'market halls', however, as mentioned above, need a heavier construction and therefore also more specialized workers and equipment. Therefore, it is assumed that for this part of the construction a contractor has to be hired. Which increases expenses and the need for professional coordination.

Concluding, one can say the same applies as regarding the previous section. All interventions seem realistic; however, some are only profitable is the camp exists for a longer period of time.

7.3 Interventions in Relation to UNHCR Standards
As discussed in the Introduction and in Chapter 4 on current practices, the UNHCR has a mandate under which all activities they employ have to fall. Next to this, the UNHCR Emergency Handbook (UNHCR, 2020) presents many regulations and guidelines on constructing camps. Following from this, this section is divided in two parts. Firstly, the main concepts of this project with regards to the UNHCR

Mandate will be discussed. Secondly, the proposed interventions will be put in relation to the more applied regulations and requirements from the UNHCR Emergency Handbook.

Concepts in Relation to the UNHCR Mandate
As discussed in the Introduction and in the theoretical framework of Chapter 2, the UNHCR focusses on providing the first needs (providing food, water, healthcare, shelter, safety and education) to refugees and safeguard them until, ideally, they return to their 'homeland'. This is also the basis on which the concept of refugee camps is constructed, namely as temporary structures that need to contain people as efficient and safe as possible. Although this seems rather strict, the mandate does offer an opening under the terms "Special Humanitarian Activities" and "Broader Development Work" (UNHCR, 2003, p. 4). These are relatively broad terms under which the main concepts of this project (improving dignity by enhancing (informal) economic activity and spatial self-determination) can be grouped. Besides, since dignity also improves both the mental and physical health of people (see section 2.2) it can even be argued that it falls under the heading "Relief Distribution" (UNHCR, 2003, p. 4). This means that interventions which improve (informal) economic activity and spatial self-determination and thereby dignity, may be possible from the perspective of the mandate.

Interventions in Relation to the UNHCR Emergency Handbook
As described in Chapter 4 on current practices, the set-up of a refugee camp following the Emergency Handbook (UNHCR, 2020) is foremost about creating a system which is as efficient as possible and which makes its population controllable. Next to this, minimum requirements regarding planning are mentioned per phase describing, for instance the number of showers that is needed per certain number of people. Last, managerial guidelines apply regarding the relation to the local community and local regulations.

When taking the flow-design into account, the proposed system of providing drinking water fits relatively well within the guidelines, it physically fits in the standard grid, meets the minimum requirements and increases efficiency of the system. Next to this, it fosters the local economy since local contractors and materials are hired and bought. However, it does make the camp more permanent, thereby reducing its temporary character. Besides, local laws often make it illegal or attach conditions to employing refugees (which is part of the proposal). Since the UNHCR also states that it is important to comply to local regulations, hiring camp inhabitants might be more difficult. However, this is partly countered by employing inhabitants for a certain amount of hours per month. By paying camp inhabitants per delivered service, no one is full-time employed, thereby evading legal problems regarding working permits. This is also why in section 6.1, all 'job-opportunities' are expressed in 1 person 8 hour working days, people get payed per delivered service which is estimated to cost a certain amount of time (concept based on information from interview with Koning (interviewee 6). Also the other 'flow-related' proposals (re-use of grey water, the collection of rainwater, production and distribution of electricity, using sewage sludge to produce biogas and recycling solid waste) do not 'violate' any UNHCR regulations or go against its main concept of efficiency, except that they give the camp a more permanent character and that local regulations might form an obstacle to 'employing' camp inhabitants. In fact, the Emergency Handbook often mentions the need to reduce pollution as much as possible and to find sustainable solutions for camp flows and processes (UNHCR, 2020).

With regard to the proposed spatial interventions, the standard lay out is more challenged. The 'communal' design, proposes to make a green communal area in each alternating cross street. This obviously challenges existing practices. However, camp efficiency is only hindered minimally, since it is only implemented from phase 2 onwards (after most construction on roads and shelters is finished) and waste

collection, grew water collection and dislodging of the sceptic tanks can also be done from the parallel street. Next to this, all interventions are made in such a way that the temporal character remains as much as possible (e.g. using old water tanks to plant trees instead of planting them directly in the ground).

Also the 'Square' design, fits in the typical UNHCR grid and lay out. However, for the implementation, one community-block has to be removed, thereby slightly increasing the campspace needed to house the same number of people. Next to this, the earth wall, the 'solar canopy' and the PV-structure along the fence, create a more permanent character. Which might therefore prove more difficult to implement. However, also here, all structures are modular and relatively easy to remove.

Last, regarding the 'Camp Generator' design, the design is made in such a way that it does fit in the current camp structure. Next to this, it also meets the regulations regarding, for instance, the need for fire breaks in a camp. However, although the bazaar-like structure is modular built and relatively easy to deconstruct, it may decrease the camps temporal character. Besides, the concept of creating space for (work)shops within the camp, thereby increasing (informal) economic activity, may be hard to relate to local laws regarding working permits for refugees.

So, to conclude, most interventions do fit within the leading concepts of the UNHCR its practical guidelines and regulations regarding the construction of camps and its scaling and phasing structure. However, some interventions do challenge some standards in the protracting phases of the camp. Next to this, most interventions give the camp more the appearance of a city or town, thereby reducing its temporal character. Last, several interventions regarding (informal) economic activity may 'clash' with local laws regarding refugee employment.

7.4 Expert Feedback

The proposed interventions were presented to three experts representing the UNHCR/ managerial perspective, the technical and flow-related perspective and the designer perspective: respectively Kilian Kleinschmidt, Wilko Koning and Hans van der Made. They were also interviewed in the earlier stages of this project to gain general insights. Therefore, they were familiar with the set-up and concepts of this project. After the presentation of the proposed interventions, the discussions were steered as little as possible to ensure that I would influence the outcomes of the interview as little as possible. Only one main question was central: Can the proposed interventions be implemented and, if not, what are the objections? In case the discussion would stall or would become repetitive, the three general assessment questions (see the previous paragraphs) would be used to 'revitalize' the discussion.

For background information on the interviewees and for the transcripts of the interviews, see Appendix II.

Feedback from Kilian Kleinschmidt
The feedback of Kleinschmidt did not address specific interventions but was centralized around one specific point what he called the "human dimension". Surrounding this concept, he gave several points to considerate and three main elements that could positively influence this. First of all, the physical structures of a camp often change rapidly after the initial construction towards a more organic form. Shelters are moved and for instance new latrines are constructed by camp inhabitants themselves. Any form of top-down description is seen as a form of dictatorship, even when it is about protecting the most basic amenities, such as main roads that should remain open for water trucks to pass. This means that the typical UNHCR lay-out, is often altered to different extends and that any intervention should be flexible enough to deal with this. Next to this, Kleinschmidt pointed out that most people do not feel any form of responsibility or ownership towards communal amenities and elements. These are often stripped bare or taken over for private use. According

to Kleinschmidt, this can be countered in several ways. First of all, the private physical situation of people should be sufficiently organized according to the users themselves. This means that people should be provided with materials, space and expert assistance in constructing their own shelters, constructed from modular parts. Only then, people are open to communal solutions and interventions. Besides, there should be, what Kleinschmidt calls, "accountability of usage". This means that camp inhabitants should be treated as customers of a certain system. For instance, water and electricity should be paid for and a camp should be a small sized welfare-state, where people pay their bills and the less fortunate are assisted. This would create a sense of ownership and responsibility towards the provided amenities. Last, on a similar note, people should also be included in the management of the system and should be given responsibility on maintaining it. Giving people camp-related responsibilities is also reflected in the remark of Kleinschmidt regarding governance. He proposes that camp inhabitants should be treated as partners. In order to do this, committees should be installed that can communicate with camp management.

With regard to the proposed interventions of this project, this all closely connects with the included concepts of including camp inhabitants in running the different systems, providing space for (work)shops and spatial self-structuring and creating community-block councils. However, all interventions could only work when camp inhabitants are satisfied with their private situation given the context they live in. With regard to the flows-related interventions and the PV-structures and larger solar canopies at the 'Public Square' and the 'Camp Generator', people should not only be involved in the construction and maintenance perspective, but also in the management of the system.

Feedback from Wilko Koning
Contrary to Kleinschmidt, Wilko Koning made several specific remarks regarding, foremost, the flow-related interventions.

With regard to the electricity related interventions, installing of the electricity net and the self-production of electricity using PV-panels, Koning commented that an underground network, is unusual in most regions. In most regions there are not even reinforced cables available. Regarding buffering on the local electricity net, he stated that often the reliability of local networks is low but that people are also used to this and to the fact that at certain parts of the day there is no electricity available. A lack of buffering capacity would therefore only form a problem for, for instance, shop owners who have refrigerators that should run all day and night. With regard to the system to reduce sewage sludge and produce biogas, Koning pointed out that it may be necessary to dehumidify the gas before it can be used to prevent blockage of the piping. He added that using human waste as product is not always culturally accepted, this was also stated by Tran, Seng To and Bisaga (2020). Last, he stated, as is also proposed, that all used elements should be prefabricated to simplify construction.

Regarding grey-water collection, filtering and distribution, Koning stated that the sceptic tanks which are used to pre-store greywater for collection by sewage-trucks, should be large enough (in the current proposals they are 1x1x2 m). They should at least have one day of buffer capacity taking large families (>10 people) into account.

On a more general note, Koning had several points of consideration as well. First of all, Koning stated (like Kleinschmidt) that vandalism is often a problem in refugee camps. PV-panels, for instance are prone to be removed for private use or to be sold. This also goes for, wooden elements that will be stripped and burned if there is no sufficient heating and/or cooking fuel. Besides, sufficiently providing the first needs, these problems can be countered by transferring both responsibility and ownership from camp management towards camp inhabitants. With regard to investments, he stated that investing in durable systems does not fall under the mandate of the UNHCR. Therefore, instead of laying the emphasis on potential revenues, investments can

be better presented as interventions that create considerable savings within the timespan the UNHCR is present in the camp. Last, Koning emphasizes on the importance of presenting all interventions as modular elements of which parts can be implemented depending on the context in question.

Feedback from Hans van der Made
Like Kleinschmidt, Van der Made emphasized on the human dimension. He stated how in a camp, all space is used to a maximum extend. Besides this, there is little regulatory tradition regarding the urban environment in the Middle East. These two factors result therein that one cannot shape the camp in advance, but that a maximum of space should be left unregulated to enable organic growth of the camp. Van der Made advices to only hold on to several main elements to steer on, that are necessary to keep the camp running or to achieve the project goals. This also connects to the notion that the Roman camp-like UNHCR design is rolled out in any part of the world without taking cultural difference into account which leads to different problems. Next to this, the grid-size of these camps becomes very inefficient in a more urban scenario since a high percentage of the space is used by infrastructure and the parcels are too small for larger developments. Therefore, the typical UNHCR lay-out should be let go on the long term and room should be provided to let it change.

With regard to the flow-related interventions, Van der Made shared his experience in Zaatari Refugee Camp, where local contractors were hired to install different amenities (e.g. installing the water net). He explained how the work was often very expensive and of a low quality while camp inhabitants themselves often aired frustration and made it clear that they would also have been able to do it themselves faster, cheaper and better. Following on this example, Van der Made stated that the know-how of camp inhabitants should not be underestimated and that it should be used. However, this obviously changes per case and size of the camp and specialized material will still have to be hired. Besides this, Van der Made suggested to also

include building materials in the flow-related interventions (building materials are already partly integrated in the project via the Green Voucher System, see section 6.3). Last, he suggested to structure the different interventions by putting them into a matrix (for instance using the axis scale and phase).

Conclusion
There are several main points of feedback that can be derived from the three interviews. First of all, what Kleinschmidt called the "human perspective". Camps rarely keep the same lay-out as how they were designed and from a more urban perspective, this would also not be desirable. Therefore, every intervention should provide room for this. Koning, on the other hand described how the UNHCR camp-type is a proven concept which serves its purpose, namely to house people efficiently in a crisis. Therefore, he posed that this lay-out should be treated with respect.

With regard to the interventions, they are deemed implementable by all three experts, however, some specific issues were mentioned, such as the fact that an electricity net is often installed above ground instead of under the ground. More generally, all experts agree that more emphasis should be lead on the modularity of the proposed interventions, since this would better reflect the fact that they can be implemented in different contexts. Next to this, foremost Koning stated that investments, for instance for the installation of a water net, should be presented as running cost reducing measures instead of an investment with revenues, since the mandate of the UNHCR only allows for efficient and direct relief aid and not for long(er) term investments in systems. The last main point on which all three experts agree is that camp inhabitants should be involved in the management of the camp as much as possible. Following from this, it is also emphasized that people should be given a form of ownership or responsibility in amenity related systems to ensure its 'survival' and functioning, also in the future when money-flows dry up and aid-agencies are gone.

7.5 Conclusion
Based on the elaborations made in the previous sections, it is concluded that most interventions are realistic, although they sometimes challenge existing practices. However, some interventions are more difficult to implement, since some of them require relatively large investments that are only profitable when a camp will exist for multiple years, require a specialist workforce, require camp inhabitants to work or decrease the camps temporal character. These include the implementation of an electricity net including electricity generation facilities, using vacuum trucks for dislodging and collecting grey water, installing a containerized water filter installation for filtering grey water, installing Sulphur resistant stoves and introducing waste collection trucks. However, it should also be noted that

According to the three experts, all interventions could be implemented, sometimes with a minor adjustment (see text and the tables below for more detail). However, they all agreed on the notion that each intervention should be flexible enough to enable 'organic' developments. Next to this, they brought forward that the modularity of the interventions should be emphasized more, that investments should be presented as potential cost savings and that camp inhabitants should be given responsibility, ownership over certain amenities and that they should be involved in the management of the camp.

All discussed considerations are recapitulated in the two tables on the following pages. In these tables, all interventions are presented including the materials and workforce that is needed to implement them. Besides this, also the three assessment criteria and the feedback of all three experts are included. In the last column, an applicability rate is given ((low applicability) 1 to 10 (high applicability)). This rate is created by giving the applicability regarding material and workforce each one point, giving the applicability regarding UNHCR standards two points (one for regarding the Mandate and one regarding the Emergency Handbook) and last giving two points regarding the applicability following the feedback of each expert. This totals ten points. When an objection towards the

applicability or feasibility of an intervention is stated a maximum of one point is deducted from the total. When an extra element is needed to let something work, only 0.5 points are deducted (e.g. adding a dehumidifier to the biogas production process). Sometimes, no points are deducted this can be because the objection in question was already incorporated and 'solved' in the orginal plans or because it is more a general remark without a direct effect. This will result in a mark regarding the feasibility or applicability of an intervention.

Interventions		needed materials	implementation in relation to materials	working days (camp inhabitants)		implementation in relation to work force	implementation in relation to UNHCR standards		feedback Kilian Kleinschmidt		feedback Wilko Koning		feedback Hans van der Made		applicability scale (low 1 to 10 high)
				installation	maintenance (per month)		UNHCR mandate	UNHCR Emergency Handbook	intervention specific feedback	general feedback	intervention specific feedback	general feedback	intervention specific feedback	general feedback	
water	installing waterpumps and waterpoints (phase 1)	waterpumps, watertowers/tanks	-relatively expensive materials -widely applied system, therefore high availability of materials highly needed, therefore: realistic	-	2/3	-specialized personel is needed (local contractor) -maintenance is done by (educated) camp inhabitants	all dignity related interventions fall under the mandate	all flow-related interventions increase efficiency, but also reduce the temporary character of the camp							8
	installing a waternet (phase 2)	piping (different diameters), taps	-relatively simple, cheap and widely available materials, however needed in high quantities (-0.5)	395	2/3	-except for taps, installation of the waternet is specialized work which can be outsourced to a local contractor (-0.5) -maintenance is done by (educated) camp inhabitants	" "	-0.5							6.5
	installing a rainwater collection system (phase 2)	gutters, piping, tanks	-all materials are cheap, simple and widely available	790	-	-both installation and maintenance can be done by camp-inhabitants	" "	" "							8
	install grey water infiltration pits (phase 1)	piping, gravel	-all materials are cheap, simple and widely available	196	-	-installing and maintaining pipes and digging and filling infiltrationpits is done by camp inhabitants	" "	" "							8
	install grey water collection and filtering system (phase 2)	piping, tanks, vacuum trucks, containerized WWTP	-piping and tanks are cheap, simple and widely available -vacuum trucks and conainerized WWTP are more complicated and expensive (-0.5)	-	224	-installing piping, watertanks and a containerized WWTP is heavy or specialized work which can be outsourced to a local contractor -maintenance is done by (educated) camp inhabitants	" "	" "	-space does not remain as it is designed, a camp changes organically -people are only open to communal interventions when private situation is satisfied (-1) -deregulate and give materials to people so they can use it themselves -treate camp inhabitants as partners and give them responsibility. -include camp inhabitants in the management of the camp and create ownership of the systems (-0.5) -let people pay for amenities to create responsibility and create small version of welfare state (-0.5)	-make primary collectiontanks large enough, incorporate at least a buffercapacity of one day or 20% -networks are rarely underground (-0.5) -local net is often unstable: hard to use it for buffering. However people are used to this. -could be that moisture accumulates in piping, therefore a dehumidifier may be needed (-0.5) -prefabricate as much as possible	-amenities in a camp should not be better than outside the camp, to prevent conflicts -emphasize the modularity of all interventions to ease applicability in different contexts -emphasize the modularity of all interventions to ease applicability in different contexts -include camp inhabitants in process and management	-space does not remain as it is designed, a camp changes organically -camp lay-out is not adjustable to cultural difference worldwide -camp inhabitants can be included even more in the interventions -gridsize is very inefficient in a future urban situation -include buildingmaterials to the flow-related interventions	7.5
electricity	installing electra net (phase 2)	cables, transformers, links	-relatively simple, cheap and widely available materials, however needed in high quantities (-0.5)	-	10	-installation by specialized personel (e.g. local constractor) -maintenance is done by (educated) camp inhabitants	" "	-0.5							6.5
	installing PV-panels (phase 3)	PV-panels, scaffolds, transformers, cables	-easy to acquire but complex and expensive (-0.5)	-	510	-installation by specialized personel (e.g. local contractor) -maintenance is done by (educated) camp inhabitants	" "	" "							7.5
cooking fuel	set up LPG distribution system (phase 1)	(Sulphur resistant) stoves, tanks, carts/trucks	-simple and cheap to distribute -Suphur resitant stoves may be more expensive	-	24	-running the system is done by camp inhabitants	" "	" "							8
	installing bioreactors, drying beds and distribution ammenities for sewage sludge reduction and biogass production (phase 2)	sceptic tanks, piping, gasholders, vacuum trucks, (excavators)	-except for vacuum trucks, all materials are cheap, simple and widely available -vacuum trucks are more expensive	1764	41	-installation is done by (medium-skilled) camp inhabitants supervised by specialized personel -maintenance is done by (educated) camp inhabitants	" "	" "							7.5
sewage sludge processing	set up collection system (phase 1)	vacuum trucks	-vacuum trucks are expensive	-	42	-running the system is done by (educated) camp inhabitants	" "	" "							8
	install bioreactors, drying beds and distribution ammenities for sewage sludge reduction and biogas production (phase 2)	sceptic tanks, piping, gasholders, vacuum trucks, (excavators)	-except for vacuum trucks, all materials are cheap, simple and widely available -vacuum trucks are more expensive	1764	41	-installation is done by (medium-skilled) camp inhabitants supervised by specialized personel -maintenance is done by (educated) camp inhabitants	" "	" "							7.5
solid waste processing	collection (phase 1)	garbage trucks/carts	-depending on the type of transport, equipment can be simple, cheap and widely available	-	42	-depending on type of vehicle used, collection is done by (educated) camp inhabitants	" "	" "							8
	collection and recycling (phase 2)	garbage trucks, recycle center (hall and outdoor space)	-depending on the type of transport, equipment can be simple, cheap and widely available -materials for recycle center are simple and widely available, but may be expensive	-	61	-depending on type of vehicle used, collection and recycling is done by both educated camp inhabitants and non-education camp inhabitants	" "	" "							8

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps

Assessment

SPATIAL INTERVENTIONS

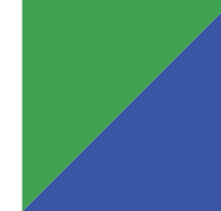| Interventions			needed materials	implementation in relation to materials	implementation in relation to work force	implementation in relation to UNHCR standards		feeback Kilian Kleinschmidt	feedback Wilko Koning	feedback Hans van der Made	applicability scale (low 1 to 10 high)
						UNHCR mandate	UNHCR Emergency Handbook	general feedback (no intervention specific feedback was given)	general feedback (no intervention specific feedback was given)	general feedback (no intervention specific feedback was given)	
communal area	1 Emergency Phase	installing growframes	growing frames, creepers	-materials are cheap, simple and widely available	-installation is simple and no complicated or expensive tools are needed	all dignity related interventions fall under the mandate	all spatial interventions challenge existing practices, some may reduce the temporary character of the camp	-space does not remain as it is designed, a camp changes organically	-be aware that materials often get stolen, create as sense of ownership and responsibility (connects to second point of Kleinschmidt).	-space does not remain as it is designed, a camp changes organically	9
	2 Transition Phase	installing plantbeds, treebeds, benches, irrigationsystem, rainwater collection system, plants, trees and pavement	watertanks, wood, dropper, pipes, gutters, plants, trees, stones, earth	-all materials are cheap, simple and widely available	-installation is simple and no complicated or expensive tools are needed	" "	" "	-people are only open to communal interventions when private situation is satisfied (-1)			9
	3 Post Emergency Phase	installing PV-structures	steel construction, concrete, PV-panels, cables, transformer, smart meter	-steel structures are simple and widely availalbe but may be relatively expensive -PV-panels, transformers etc, are easy to acquire but complex and expensive (-0,5)	-installation and maintenance may be relatively complex, however, no complicated or expensive tools are needed (-0.5)	" "	" "	-deregulate and give materials to people so they can use it themselves	-emphasize the modularity of all interventions to ease applicability in different contexts		8
public square	1 Emergency Phase	installing growframes, digging and planting a wadi, install trees in plantbeds with fixed benches and place football goals	growframes, creepers, earth, watertanks, wood, football goals, trees, plants	-all materials are cheap, simple and widely available	-installation is simple and no complicated or expensive tools are needed	" "	" "	-treate camp inhabitants as partners and give them responsibility.	-include camp inhabitants in process and management	-camp lay-out is not adjustable to cultural difference worldwide	9
	2 Transition Phase	create earth wall with build in bench, finish wadi and planting and construct storage building	earth, watertanks, wood, concrete, steel construction, PV-panels, cables, transformer, smart meter	-earth wall, bench and wadi are made of materials wich are cheap, simple and widely available -steel structures are simple and widely availalbe but may be relatively expensive -PV-panels, transformers etc, are easy to acquire but complex and expensive (-0.5)	-most installation is simple and no complicated or expensive tools are needed -regarding the storage building, installation and maintenance may be relatively complex, however, no complicated or expensive tools are needed (-0.5)	" "	" " -0,5	-include camp inhabitants in the management of the camp and create ownership of the systems and designs -create space for economic activity		-emphasize the modularity of all interventions to ease applicability in different contexts -camp inhabitants can be included even more in the interventions -gridsize is very inefficient in a future urban situation	7.5
	3 Post Emergency Phase	finalize PV-covered structures on square and along fence	steel construction, concrete, PV-panels, cables, transformer, smart meter	--steel structures are simple and widely availalbe but may be relatively expensive -PV-panels, transformers etc, are easy to acquire but complex and expensive (-0.5)	-installation and maintenance may be relatively complex, however, no complicated or expensive tools are needed (-0.5)	" "	" " -0.5				7.5
camp generator	1 Emergency Phase	construct first main PV covered hall and place trees in plantbeds with fixed benches	steel construction, concrete, PV-panels, cables, transformers, smart meters, watertanks, earth, wood, trees, stones	-plantbeds are made of materials wich are cheap, simple and widely available -steel structures are simple and widely availalbe but may be relatively expensive -PV-panels, transformers etc, are easy to acquire but complex and expensive (-0.5)	-installation of plantbeds is simple and no complicated or expensive tools are needed -regarding the PV covered hall, installation and maintenance may be relatively complex, however, no complicated or expensive tools are needed (-0.5)	" "	" "				8
	2 Transition Phase	construct two remaining PV covered halls and finalize schoolyard	steel construction, concrete, PV-panels, cables, transformers, smart meters, earth	-steel structures are simple and widely availalbe but may be relatively expensive -PV-panels, transformers etc, are easy to acquire but complex and expensive (-0.5)	-installation of elements in the schoolyard is simple and no complicated or expensive tools are needed -regarding the PV covered halls, installation and maintenance may be relatively complex, however, no complicated or expensive tools are needed (-0.5)	" "	" "				8
	3 Post Emergency Phase	construct PV covered walking routes connecting the halls	steel construction, concrete, PV-panels, cables, transformers, smart meters	-steel structures are simple and widely availalbe but may be relatively expensive -PV-panels, transformers etc, are easy to acquire but complex and expensive (-0.5)	-installation and maintenance may be relatively complex, however, no complicated or expensive tools are needed (-0.5)	" "	" " -0.5				7.5

8

CONCLUSION

This graduation project started of with the following main research question: "How can a modular framework of interventions enhance a sense of spatial self-determination and foster (informal) economic activity in UNHCR planned refugee camps while maintaining a non-permanent character and remaining adaptable to scale changes?". In order to answer this question, eight sub-questions had to be answered first. The answers to these questions provided input for the intervention proposals. These intervention proposals, in turn, form the answer to the main research question. The last three sub-questions (nine to eleven), assess whether the proposed interventions are realistic. To answer all sub-questions four main methods were used: literature reviews, interviews, best case analyses and case studies. The chapter ends with a section on further, more general, considerations on the topic of this thesis.

8.1 Conclusion
The first step was to fully understand and concretize the defining concepts of this graduation project. Since dignity is influenced by a sense of self-determination, the first sub-question that had to be answered is "What factor(s) that influence dignity can be applied in a planned refugee camp in a context of 'undetermined temporariness'?" (sub-question 1). This question is important to understand what elements influence dignity in the build environment. With the answer to this question, the search to ways that enhance this/these factor(s) can start. Following from theory, see Chapter 2 (Theoretical Framework), it was determined that these factors are (informal) economic activity and a sense of spatial self-determination.

The second step was to get a better understanding of the functioning, construction and phasing of UNHCR planned refugee camps in general and how temporariness is defined in these camps. The last, since, as discussed in the Introduction, UNCHR refugee camps have to keep a temporary character. This leads to the following four questions:
2) "What is the most common UNHCR planned refugee camp typology?"
3) "How is temporariness defined in an UNHCR planned refugee camp setting?"

4) "What is the most common method of phasing in UNHCR planned refugee camps?"
5) "Who are the usual stakeholders in UNHCR planned refugee camps?"

With regard to sub-question two, it can be concluded that UNHCR planned refugee camps are about providing the first needs (e.g. water, food, shelter, safety and education) and managing large groups of refugees as efficient as possible (for elaboration and visualization, see Chapter 4 on current practices). In these camps, temporariness can be defined by three elements: its distance to local community centers (preventing spontaneous interaction with the local community, rooting and the build-up of one's life), its structure (which is purely about 'holding' people instead of housing them) and the use of light and temporary materials. With regard to sub-question four, it became clear that there are three main phases that represent a certain standard of affiliated support and guidelines regarding flows in a camp (e.g. water, sewage and cooking fuel), these are: the Emergency Phase, the Transition Phase and the Post-Emergency Phase (see section 4.2). Sub-question five is the last question on current practices and is about the stakeholders that have a part in both constructing and managing camps. These stakeholders can roughly be divided in six groups (Bazuin, 2018): Local Governments,

UN agencies, International NGO's, Researchers, International donors and local NGO's. The number of stakeholders and the types of stakeholders differ per case (see section 4.4 on case specific information).

To illustrate all findings, three brief case studies were conducted of camps both in Northern Iraq and Jordan (Domiz I, Qushtapa and Azraq refugee camp).

The next and third step, was to find out how spatial interventions can enhance either or both spatial self-determination (sub-question six) and (informal) economic activity (sub-question seven) and to find out what activities in an UNHCR planned refugee camp context can enhance (informal) economic activity (sub-question eight). The first two questions are answered in Chapter 5 (Analyzing Spatial Elements), where four different types of space are spatially analyzed: squares, courtyards and streets, communal gardens and covered markets or bazaars. The focus was on those spatial elements that enable a relatively high level of (informal) economic activity and/or spatial self-determination. A number of elements were distilled (see Chapter 5).
Regarding sub-question eight, it was determined that both the production and processing of flows, such as water, sewage and cooking fuel, are always present in any camp regardless of its context or scale. Therefore, interventions regarding the involvement of camp inhabitants in these activities have the potential of enhancing (informal) economic activity in a wide variety of contexts and cases.

To answer the main research question of this graduation project, several interventions are proposed which can be divided under two main perspectives: flow-related interventions (see section 6.1) and spatial interventions (see section 6.2). All interventions are illustrated by applying them in Qushtapa Refugee Camp (North Iraq). Both the flow-related and the spatial interventions are phased using the standard phasing structure of the UNHCR, thereby making them better applicable in the structure of the UNHCR. With regard to the

flow-related interventions (see section 6.1), each phase has a guiding principle which groups multiple proposed interventions and ensures that all modular interventions fit together and build up to create a complete system during the third and final phase (Post-Emergency Phase). Regarding the spatial interventions (see section 6.2), three designs are made to serve different scales: communal scale, block/sector related scale and camp scale. For the designs made at each of these scales, a list of design principles is presented which are based on the findings from Chapter 5. In section 6.3, interfaces between both perspectives and parts that can be integrated into one another, are discussed. Finally, in section 6.4, it is demonstrated, using the proposed 'water net implementation', how interventions are also designed to fit and function in different scenarios regarding the future of the camp. For further elaboration on the specifics of the proposed concepts and interventions, please see Chapter 6, the Design Exploration.

The last step was to assess the proposed interventions regarding how realistic they are. This assessment consisted of three criteria on how realistic the interventions are: regarding the materials (sub-question nine), regarding the workforce (sub-question ten) needed and with regard to how the proposed interventions fit in the existing UNHCR-Mandate and regulations (sub-question eleven). Next to this, three experts from different fields of expertice (Kilian Kleinschmidt; UNHCR/managerial perspective, Wilko Koning; technical perspective and Hans van der Made; designers perspective) provided feedback on the general applicability of the interventions during interviews.

The outcome of the assessment is that most interventions are realistic, although they sometimes challenge existing practices. Besides, some interventions are more difficult to implement for three reasons: the need for relatively high investments, which are only profitable if the camp exists for several years, the need for a workforce of (external) specialists and/or camp-inhabitants, which should be available and legal and a possible reduction of

the temporary character of a camp (for a further elaboration on this, see Chapter 7). Last, as main feedback from the experts, it came forward that camp inhabitants should be included as much as possible regarding all activities that take place in a camp. However, they will only be open to this when the quality of their private shelter is satisfactory.

8.2 Project Considerations
Based on the literature reviews, analysis, interviews, design- and assessmentprocess conducted in this graduation project, eight more general considerations came forward regarding different perspectives. The first, is about the 'human perspective' and why and how to include people. The second and third, are about physical considerations of camps. Number 4 to 7 are about governance and stakeholder related considerations. The last consideration is specifically about the project and its interventions.

1) Asside from including people in the flow-related activities, people should also be treated as partners and be enabled to participate as much as possible on all levels of management and regarding all other activities that take place in a camp from the Transition Phase onwards. This will increase a sense of ownership and responsibility and therefore improve the functioning of a camp. Besides, To do this, general registration of camp inhabitants should also include the profession, educational status and future ambitions of people to increase knowledge on what capacities are present in a camp and to enable individual approaches regarding 'job-offers'. Besides, participant commitees should be created to enable different groups of camp inhabitants, to voice their opinion and be treated as partners.

2) Regarding private parcels: as much freedom as possible should be given on how people want to organize them; provide, for instance, materials for modular shelters/other types of constructions. This creates shelters that are better accustomed to personal requirements. This, in turn, has

as result that people are more satisfied with their private situation and therefore are more open towards communal interventions. This may also reduce vandalism and therefore safe costs, increasing the ratio of 'positive' money, to create, against 'negative' money to repair elements.

3) Ensure that no physical intervention obstructs the concatenation of 'community blocks' in a future (urban) scenario. This, because the 'community block-grid' is too small for larger buildings to be placed and is inefficient based on the fact that a high percentage of the space is occupied by infrastructure.

4) Ensure that all interventions are cheap, simple and have a temporary appearance or that they form a 'win-win' situation for all stakeholders (both local governments such as the UNHCR, NGO's, donors and refugees), for instance by reducing maintenance costs, creating job-opportunities for local companies and improving local ammenities, at the time of implementation and in different future scenarios. When a certain intervention creates a 'win-situation' for all stakeholders, more is possible and some regulations or requirements, for instance regarding the temporary character of a camp, become less stringent. To do this, one will have to manoeuvre between different stakeholders which all have very different (sometimes contradicting political) interests. These stakeholders differ per region and may also include stakeholders from hybrid forms of government, for instance prominent persons (e.g. an Emir) within a community who's historical territory runs across multiple international borders and who still have a strong (moral) influence on the people of their community. This manoeuvring is a complex process, where modularity, simplicity and flexibility of proposed interventions are key, since only then, they can be adjusted to different requirements and components can be re-used, thereby increasing the chance that they can be implemented.

5) Regarding the political dimension, it is important to deeply understand the general

political stance towards refugees in an area. This is key, to understand how much tolerance there is regarding the creation of jobs for refugees and regarding implementations that may reduce the temporary character of a camp.

6) To better substantiate decisionmaking regarding investements for certain interventions, it would be helpfull if further research would be conducted towards criteria that predict the expected life time of a camp. This would, for instance, enable a better substantiated cost-benefit analysis (see section 9.6).

7) Be aware of the constant 'balance act' between current practices based on controlability, efficiency and solely providing relief aid and the need by camp-inhabitants for self-determination. In the field of camp-construction, there is no consensus regarding the balance between those themes and different experts have very different opinions on where the emphasis should lay. Interventions proposed in this graduation project, take the current standard UNHCR lay-out of camps as base and try to improve them regarding the dignity of its inhabitans and to make them more future proof while being very aware of the impact they have, for instance on the temporary charachter of the camp. Besides this, they aim to improve basic amenities, without hindering efficiency, especially during the Emergency Phase.

8) All proposed interventions in this graduation project form a framework of modular elements that can be integrated into one another but that can also be implemented seperately. The implementation of an element depends on contextual parameters such as the financial situation, the expected life-time of a camp and the climate of the region the camp is placed in. Therefore, no ideal order of implementation or importancy ranking is made with regard to the different proposed interventions.

9

PART 4 | REFLECTION

REFLECTION AND DISCUSSION
-9.1 social, academic and professional relevance
-9.2 reflection on the used methods
-9.3 possible generalization
-9.4 discussion on ethics
-9.5 discussion on the process
-9.6 recommendations
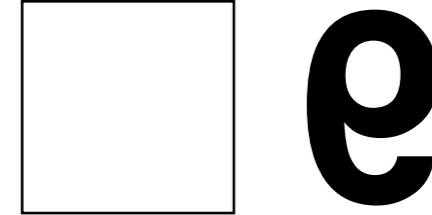
REFLECTION AND DISCUSSION

This chapter is divided in six sections which disuss the relevance of the project, the methodology, possible generalization, ethical considerations and the process in general. In the final section, three recommendations will be made regarding possibilities for further research.

9.1 Societal, Academic and Professional Relevance

This project is about enhancing dignity in UNHCR planned refugee camps. According to Agamben (1998) and Oka (2014) there is a lack of dignity in refugee and IDP camps which besides decreasing general liveability also has a negative effect on both the physical and psychological health of the people involved (Jacobsen, Oliver, and Koch, 2008; Khatib & Armenian, 2010). Taking into account that currently, 4.6 million people are residing in planned refugee camps (UNHCR, 2020) and that according to the UNHCR (2020) these numbers are likely to increase, this graduation project touches upon a pressing and relevant societal topic. Besides having societal relevance, it also became clear that, up to now, little research has been conducted towards a spatial approach of improving dignity through self-determination. This is also acknowledged by Couldrey & Herson (2017). Last, from a professional point of view, UNHCR planned refugee camps form a very interesting case since the UNHCR Emergency Handbook, on which general camp lay-out and management is based, only contains planning and managerial guidelines and lack a more spatial perspective. This fact makes that forming a spatial framework for UNHCR planned refugee camps forms relatively unexplored terrain in the field of Urbanism.

9.2 Reflection on the Used Methods

In the period between P1 and P2, the first version of the methodology was made. This version included several methods on gathering information and data on the project, these were: a literature review to gain general insight on different topics such as dignity, self-determination and current practices regarding refugee camps, best case reviews to get to understand how (informal) economic activity and spatial self-determination was enhanced in other cases, interviews to gain insights on the different perspectives regarding current camp construction and management practices and the current functioning of camps and, last, multiple case studies (Qushtapa (Northern Iraq), Domiz I (Northern Iraq) and Azraq (Jordan)) that are analysed to 'touch down' at three locations and later to test design concepts and implementations at these locations in different contexts. Next to these methods on analysis, also an assessment element was included, where experts from the field (e.g. a former camp-director, a water expert and an urbanist) would assess whether the proposals would 'work', thereby reflecting on the final design proposals and assessing whether they would enhance both (informal) economic activity and spatial self-determination (elements that need to be enhanced in order to raise dignity in camps) in a given case. This would finalize the 'design cycle' (see Figure 9.1).

During the analysis and design process, the methodology which, at first, seemed to be rigid and strictly divided in different parts, became more 'fluid' and the different methods became strongly integrated while using them. Besides this, it turned out during the process that all methods were used, however, three were executed or used differently than originally envisioned. First of all, regarding the best case reviews which were expected to be about other refugee camps such as Zaatari in Jordan and AFAD managed camps in Turkey, it turned out that it was more useful to purely look to the concepts of spatial self-determination and (informal) economic activity and analyse cases where these were present in a high degree (e.g. squares, streets, bazaars and markets). Besides, this made it possible to also include cases that are visitable and could therefore be better analysed. Secondly, the interviews were originally envisioned to include different groups including camp inhabitants themselves. However, these were not included in the end for four reasons, two ethical and two practical. First of all, it is hard to find the right people, since camp-administrations are (for obvious reasons) not public and it was impossible for me to travel there to interview people on location (see section below). Secondly, interviewing camp inhabitants, would include talking to potentially traumatized people about very sensitive topics such as their dignity in camps. Therefore, my research could have infringed their well-being, which was very hard to assess. Thirdly, as pointed out by two interviewed experts (Jaap Gräber and Hans van der Made), for refugees to criticize elements in their current situation and to expose themselves to talk to a foreign researcher might endanger the lives of themselves or their relatives due to persecution. According to the same interviewed experts, fear evolving from this situation would also have made it very difficult to gain critical insights. The lack of this perspective in the interviews was overcome as good as possible by using eyewitness reports and (peer-reviewed) research regarding relevant topics. Last, with regards to the three case studies, visiting them would have been ideal to really sense the 'genius loci', however, this

was not done for five reasons. First of all, the focus of the project was mostly on principles and numbers, not on locational specifics. Next to this, besides safety issues, such as rocket bombardments on Erbil International Airport and ground troops firing on landing and taking of airplanes, Covid-19 measures, including a 14 days quarantine duty and unpredictable local measures in Iraqi-Kurdistan, made it almost impossible to visit Qushtapa and Domiz I camp. Still, Azraq camp in Jordan, could be visited after asking permission to the UNHCR. However, based on environmental reasons it was decided not to visit just one camp. Last, besides 'experiencing' the camp atmosphere, no concrete research goal could be formulated since most information needed for the project could be derived from maps, satellite imagery, literature, available documents and interviews.

With regard to the assessment element of the methodology, the sub-research questions were changed during the final stages of the project from questions assessing whether the proposed interventions would enhance (informal) economic activity and spatial self-determination to questions regarding how realistic the proposed interventions are in reality. The reason for this change was that these questions could only be answered with certainty if the proposed interventions would be physically tested by implementing them in a case after which surveys would be conducted to assess whether the interventions would have an effect. This, obviously, is not possible in the course of a graduation project. However, this change of assessment-focus also meant that the whole graduation-process becomes a 'U-shaped' process instead of a 'cycle' (see Figures 9.1 and 9.2).

All in all, the main advantage of the methods used in this project is that the whole project was doable from home (a necessity given COVID-19 restrictions) while still being able to explore multiple angels of the project. The main disadvantage of the used methods is that, although it was not necessary, a site visit would have helped since it, nevertheless, would have
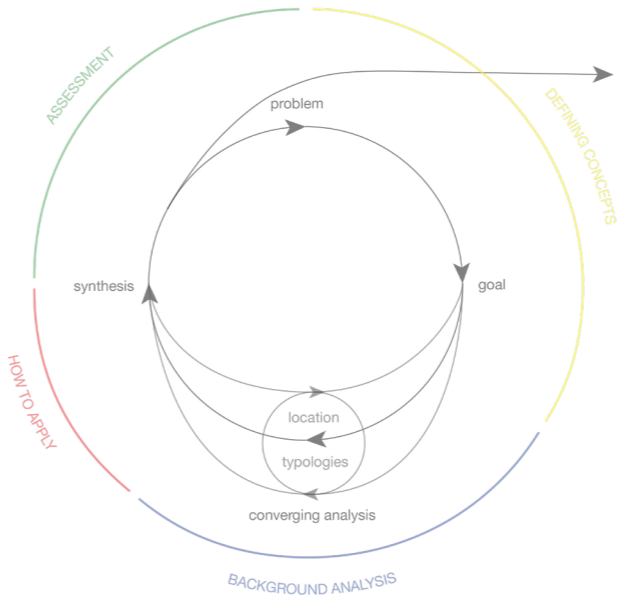

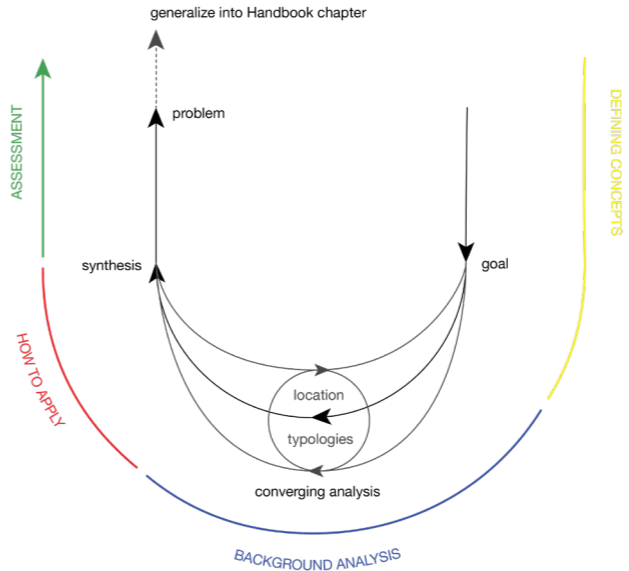**Figure 9.1,** the original 'analysis-design cycle'

Figure 9.2, the final 'U'-shaped 'analysis-design process'

provided me with better sense of what a camp 'feels and smells' like, which besides enhancing my self-confidence on the topic may also have made the project more credible to practitioners.

9.3 Possible Generalization

Although most research was done regarding UNHCR planned refugee camps in the context of the Syrian Civil War, and all concepts and design interventions are also applied in this context, some generalization of the results to other contexts might still be possible. Outcomes of research conducted towards spatial elements

that enhance (informal) economic activity and/or spatial self-determination is widely applicable since also a wide array of data sources (derived from very different contexts) was used to conduct this research. Taking into account that the UNHCR provides the same 'services' everywhere worldwide regarding refugees and that this project focusses on UNHCR planned refugee camps, design interventions and concepts that function in the case studies have also a high chance of functioning in other UNHCR planned refugee camps since these all have very comparable lay-outs. However, geographical, climatological and cultural aspects might again temper complete generalization.

9.4 Discussion on Ethics

As always in the field of Urbanism, designs and alterations on the build environment can have a huge impact on the people that live, work and recreate there, thereby placing great responsibility on the shoulders of the urbanist in question. This is even more the case in this project, since camp inhabitants have no real freedom of choice. In other words, they have no choice on how they live their lives and following from this they have to live exactly according to the schemes, structures and designs made for them, potentially by me. Although from a personal perspective, I really think the design proposals in this project would improve the lives of people in UNHCR planned refugee camps, implementing the proposed interventions would still be an experiment of which the outcomes are nevertheless uncertain. Besides, in this context, I am aware of the fact that I am an upper middle class 'western' man proposing interventions 'from a distance' and may miss certain aspects and feelings in live that are self-evident to others.

Regarding the interventions themselves, I decided to conform my design proposals to the current UNHCR Mandate and the UNHCR's main regulatory concepts of current camp design. This, knowing that these are part of the very doctrine (focussed on return) that enables

the protracted situations in which many refugee camp inhabitants find themselves in the first place. However, I made this choice to make my project more realistic and applicable to current situations instead of making a statement by designing an utopian camp with which I would involve myself in politics. The choice to conform to the UNHCR Mandate also made that I focus on refugee camps instead of also focussing on IDP (Internally Displaced People) camps, where problems are of comparable gravity if not worse.

For ethical considerations regarding the involvement of (former) camp inhabitants themselves, see the first section.

9.5 Discussion on the Process
With regard to the general process of the project, several things were striking. While searching for conditions that give direction to the design by using certain perspectives, it sometimes happened that the project focus gradually changed towards these perspectives instead of laying on the actual goals of this graduation project (enhancing (informal) economic activity and spatial self-determination in order to raise dignity in refugee camps). At the same time, the level of complexity was so high and the level of focus so deep that it was hard to become aware of this. An example of an event like this, was an extreme focus on 'camp-flows' (e.g. electricity, water, cooking fuel) in order to find a way to enhance (informal) economic activity. When at some point the impression developed that this would become rather laborious (due to quantification problems), it was decided (after discussion with my supervisors) that these flows could also be used to literally create space for spatial self-determination. However, while doing this, no attention was paid on actually how to use this free space. Later, the focus in this perspective returned to enhancing (informal) economic activity. Besides this, the constant interaction cycle of analysis and design worked well.

Due to restrictions, roughly 90% from the work was done from home. This had several

consequences regarding the graduation project. First of all, although throughout the majority of the year it was possible to work one day a week at the faculty, interaction with other students providing reflection and inspiration was difficult to generate. Even though it is hard to pinpoint specific consequences from this, it made the process in general much more individualistic and therefore sometimes more difficult then I was used to during other projects I did in this master before the pandemic. Secondly, the lack of a printer and the fact that all products had to be discussed online during supervision sessions, made that the products had to be put in a very different format then was required for the final products (among others, a report). This made that the workflow, which usually builds up the final product had to be changed, thereby excluding the report from the general work flow and making it a 'separate element'. Last, the constant need to work digitally, made it harder to retain one's feel for scale, color and shading.

9.6 Recommendations
Based on this project, there are three main recommendations I would like to make. First of all, further research could be conducted towards whether the design proposals function in practice. This would involve choosing two comparable cases of UNHCR planned refugee camps, implementing one or more of the proposed interventions in one of them a and then measuring, for instance by using surveys whether they have the desired effect. This would 'close' the 'design-cycle' and would provide empirical evidence on whether the interventions function as envisioned, thereby improving the project. Secondly, research could be conducted towards the applicability of the design interventions in other regions and even in other types of camps, such as IDP camps and camps that are not planned by the UNHCR.
Third and last, on a very different note, it could be helpful to develop determination criteria which predict the probable 'life-time' of a refugee camp. This would make decision making regarding investments for interventions in camps better substantiated and therefore more

convincing.

DIGNIFIED THROUGH SELF-DETERMINATION: USING SPACE | FLOWS
The case of UNHCR refugee camps

Reflection and Discussion

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