

Chapter 5

The Caravan

Economics and Architectonics

Caravans, or prefabs, are simple structures that were originally, and still are, used for trade. The larger ones can be seen on the back of ships or lorries, moving goods from one place to another. The smaller ones can be used temporarily as offices on construction sites, or as accommodation for workers, and examples of this type can be widely found across the Gulf region. Migrant workers' camps, including those in Oman and the UAE, are built from smaller containers similar to the ones distributed in Zaatari camp. The fact that the built structure of Zaatari camp is assembled from containers mostly brought from, and donated by, Arab Gulf countries shows the connectedness of the histories of migration and refuge in the Middle East; beyond the narrative of one state, one refugee group or even one camp. Migrant workers from southern Asia, and Syrian refugees — both unwanted categories, and a potential form of a crisis waiting to erupt — are *contained* by nation states using the prefab. The nation states confront the circulation of refugees and unwanted migrants by using the simple, and even trivial-looking, element of the container, the prefab or the caravan as it referred to in Zaatari.¹ States, prefabs and people, circulating in the Middle East and beyond, drawing new histories of marginalized beings, living inside a 15 square-metre room made of metal sandwich panels.

The focus on the caravan in this chapter has two objectives. The first is to complement the analysis of the previous chapter by showing how the architecture and emerging economy of the caravan contributed to the transition from shelters to dwellings. Examples of this transition were shown in detail previously, and the importance of the caravan — its prices, sizes and building techniques — is evident across the case studies. In this chapter, the missing pieces of information will be illustrated, highlighted and elaborated on. The second objective of the chapter is to

1 For further analysis of the circulation of prefabs and how they are used to move, contain and displace refugees, see (Baumann 2020).

underline the multi-scalar nature of dwelling. Previously, practices of dismantling and reassembling were traced across the scales of the camp, the neighbourhood or the cluster, and the dwelling itself. In this chapter, I look deeper into the body of the container, showing how these practices manifest on a material and micro scale. To do so, the analysis focuses only on the movable types of caravans. The newly distributed ones — one of which appeared in the last case study — are not included, due to their scarcity and insignificance in comparison with the movable shelters.²

The significance of caravans

Caravans were distributed in Zaatari camp as a provisional replacement for tents. Many tents collapsed under the heavy snow that hit the camp around the end of 2012, and Gulf donors — including both governments and NGOs — were among the first to donate caravans. During that period, the camp was being officially managed by the JHCO and the UNHCR, yet the landscape and power relations within the humanitarian regime in Jordan were becoming more heterogeneous and transnational than before, and the presence of Gulf actors was accelerating. The involvement of Gulf actors shaped the establishment of camps in Jordan, as well as their built structure. The provision of caravans was never consistent, and strongly dependent on donations. In addition, although the UNHCR adopted the caravan as the main shelter in Zaatari camp, the times at and numbers in which caravans were brought to the camp varied (see Chapter 1). ‘I don’t think we have exact records of what and when caravans arrived in the camp. Especially at the beginning ... it was, to be honest, a bit chaotic’, confessed a camp technician in embarrassment. The gradual replacement of tents by caravans — or what I refer to as ‘caravanization’ — produced an exceptional site: a camp, the size of a city, entirely built of caravans, mostly donated by Gulf actors, and differing in size and quality. Eventually, Zaatari camp became a ‘huge caravan park’, to put in the words of a UN reporter (UNHCR 2013b). This description illustrates how the humanitarian actors perceived the camp. An accumulation of endless rooms, shining under the sizzling sun, resembling a metallic carpet over the Jordanian desert. Refugees, however, perceived the caravan differently. This simple shelter unit became the centre of social life in Zaatari camp. I still remember hearing a UNHCR Field Officer answering his phone: ‘Please don’t panic! We will try to find you a caravan as soon as possible! Meanwhile, try to convince your wife to stay with her relatives until we call you to

2 The years 2016 and 2017 involved experiments using ‘new’ types of caravans. These were larger, incorporating a built-in kitchenette and bathroom, and most importantly, fixed to the ground.

get your new caravan'. For refugees in Zaatari camp, the caravan became an element of paramount importance. Their daily life is organized around the caravan — its dimensions, characteristics, and even sound qualities. 'Listen, can you hear the sounds in the nearby caravan?' a young volunteer asked me while we were in an activity centre. 'This is how we hear our neighbours too. Imagine. Could you live like this? If I knew this before, I would have arranged it [dwelling] differently', he added.

The caravan — initially a shelter unit, or a *container* space — became a *contained* element within the dwelling arrangement. It was absorbed by a more holistic and vital composition: namely the dwelling. The influence of the caravan on the re-assembling practices in Zaatari camp can be traced both in terms of architecture and economics. Practices of reassembling were influenced by the physical and material quality of the caravans on the one hand, and on the other, by their economic value and constantly changing prices. Yet how did caravans — an element offered to refugees free of charge — gain value? Further, how does that relate to the economic dynamics of reassembling?

A surplus of caravans

The accommodation of refugees in Zaatari camp is based on a policy that provides each family of five members with its own shelter unit. Early on, the traditional type of UNHCR family tent was distributed in the camp. However, from November 2012 onwards, the policy shifted towards caravanization, which meant that all the tents in the camp were to be replaced by caravans. Ideally, a successful implementation of this policy would have resulted in refugees having only one form of shelter at a time, and thus no caravans would be exchanged. The statistics nevertheless show a different picture: A joint report by the UNHCR and REACH (2014) suggests that out of 19,882 caravans in Zaatari camp during May 2014, about half had been exchanged. A total of 8,283 caravans were purchased, 909 caravans were inherited, 508 were received as gifts, 98 were rented and 94 were empty and waiting to be sold.

One of the main reasons for the surplus of caravans in Zaatari camp was the change in population counts between 2012 and 2014. According to the UNHCR (2018), a total of 461,701 refugees have passed through the camp since its opening in July 2012. Considering that the population of the camp has stabilized at approximately 80,000, this means that about 380,000 refugees have left. Taking into consideration this timeframe, it can be concluded that many who were given caravans during the first months of 2013 left the camp during the second half of that year. This explains the transition in the camp's demography from around 200,000 in mid-2013 to 80,000 in mid-2014. In view of the arbitrary conditions prevalent

within the camp during that phase, it is likely that the UNHCR was unable to keep a clear record of those who had left the camp and did not return the caravans they had been given. This can be confirmed by the strict policy that was put into place in 2014, stating that that refugees were not allowed to leave the camp unless they had returned the caravans they had received.

Another reason for the surplus of caravans in Zaatari camp is the dynamic nature of familial relations of refugees there. For example, the marriage of a young couple would make them eligible for a caravan. However, if a couple divorced, caravans were not returned but remained with the family. These family changes, such as divorce, repatriation, death, relocations to another camp and so on, contributed to a surplus of caravans that appear to have been equally distributed across the camp during May 2014.

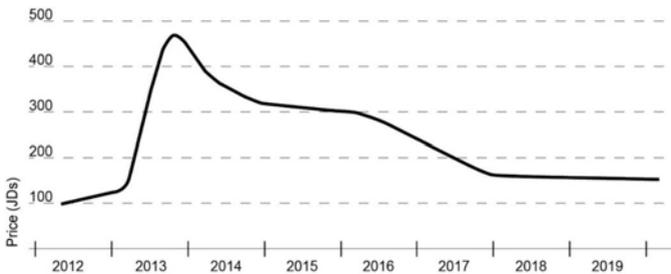
The caravan market

Caravans acquired an economic value by becoming essential components of the dwellings. As shown in the previous case studies, the reassembling practices were heavily reliant on refugees' ability to secure and manage caravans in response to changes in social space, family relations and their needs at a given time. The tension between the *demand* and the *availability* resulted in caravans gaining an economic value. The significance of this value was little known to the humanitarian actors in the camp, but it was noted that caravans were entering a local 'economic chain'. As the UNHCR and REACH (2014) report concluded after a survey conducted in the camp during May 2014, 'caravans are used as a source of income and a product, rather than merely a shelter'. This reading of the economic dynamics of dismantling and reassembling reflects the humanitarian stance towards the camp, and the techno-managerial approach by which its elements are seen and dealt with: the caravan is a form of shelter and should not be traded or exchanged. This perception of the shelter, however, contrasts with refugees' understanding of the structure as a crucial component of their dwellings, and a versatile element that facilitates or hinders their dwelling needs.

Gaining such a central role in refugees' lives, the caravans turned from a humanitarian element provided free of charge, into a form of currency. Caravans became the 'gold' of the camp, and at the same time, its architectural 'DNA'. The prices fluctuated over the years based on availability and demand. For example, as shown in the previous chapter, Sami bought a caravan for 135 JDs to expand his dwelling at the end of 2012. A few months later, Eyad and his family bought two Omani caravans for 100 JDs each. Prices increased between mid-2013 and mid-2014. During this period, Eyad's family bought a Saudi caravan for 450 JDs. The prices, however, started to decrease again from the second half of 2014 onwards. For example, Omar

bought a caravan for 340 JDs and another one (without a floor) for 275 JDs. The graph below, depicting the development of average caravan prices between 2012 and 2019, was drawn based on these figures, as well as further interviews with refugees.

Estimated average prices of caravans in Jordanian Dinars between 2012 and 2019



The graph shows that average prices jumped from 125 JDs in 2012 and 2013, to 450 JDs by mid-2013. This extreme change marks a boom in dwelling construction in Zaatari camp in that period. It was also affected by a radical increase in both the number of refugees and of caravans at the time. Later, dwelling construction started to decrease. According to the UNHCR and REACH (2014) report in May 2014, some 52.3 per cent of dwellings had only one caravan, while 31.8 per cent had two and 11.3 per cent had three caravans as part of the same dwelling. It was also found that caravans made up about 75 per cent of all shelters in the camp during the period, meaning that caravanization had continued, albeit at a slower pace. All these aspects led to a reduction in caravan prices to an average of 350 JDs in 2017 and 175 JDs in 2019.

Prices of caravans also differed depending on the type. The specific details and quality played a role in determining the values, where the quality was often defined by the materials used in manufacturing. For instance, refugees preferred caravans that had metal sheets on the inside rather than PVC or wood. Refugees also attached more value to caravans of a larger size, such as the Emirati caravan (6.5 x 3 m) and the Kuwaiti caravan (6 x 3.5 m). The prices of the caravans also fluctuated over the years due to availability and demand. Some caravans such as the Kuwaiti, which ranks among the most expensive, reached a price of 900 JDs (about 1100 euros) in 2013, before dropping back to half of that amount in 2017. The Saudi caravan, by comparison, maintained its average price. One reason for this could have been its widespread availability in the camp. Moreover, the prices of the caravans

as units influenced the prices of their component parts, which were used in the construction process.

Estimated caravan prices and quality between 2013 and 2017

Type (origin)	Approximate Dimensions (metres)	Quality	Estimated prices in 2013	Estimated prices in 2017
Kuwaiti	6 x 3.5	Metal panels on the inside and the outside. Good quality and larger size	900 JDs	450 JDs
Saudi	5 x 3	Metal panels. Small size	450 JDs	350 JDs
Emirati (Hilal)	6.5 x 3	Metal panels on the inside and the outside	750 JDs	400 JDs
Omani	6 x 3	Metal panels on the outside, wooden surface on the inside	450 JDs	250 JDs

This informal and emerging value that the caravans in Zaatari camp gained, highlight the nature of the economic dynamics of reassembling. These dynamics are strongly tied to dwelling as a primary force, rather than to the logic of the local or international market. One example of that is the actual prices of the caravans, which range between 2000 and 2500 euros per unit (Al-Hurra 2013; QatarLiving 2015). Taking into consideration that Zaatari camp has approximately 20,000 caravans in total, this means that the cost of accommodating 80,000 refugees was around 5 million euros. The international values for materials and construction were substituted by an informal value that fluctuated over the years, depending on availability and demand, and on the quality of the containers. Thus, caravans were not only transformed from donated shelters into economic assets, but also produced a market managed by realtors, in which the values were reassessed and negotiated.

The realtors

In addition to caravans being exchanged through word of mouth, a group of refugees in the camp became specialized in dealing with them, and adopted this as their profession. They are known among the refugees as ‘caravan sellers’ or ‘realtors’. The exact location and size of this business is difficult to trace, because of the intimidation surrounding their work and the close supervision imposed on them by the camp’s management. Nonetheless, caravan sellers connect refugees who want to sell ‘properties’ with others looking to purchase or rent, and by doing

so, they earn a fee. The properties are not restricted to caravans, and can extend to entire dwellings. Buying an entire dwelling was a choice that could only be made by refugees with sufficient financial means, as dwellings cost between 1000 and 3000 JDs, based on the number of caravans involved, their prices at the time and any additions made to the dwelling. Nevertheless, purchasing a dwelling seemed to offer an attractive option for those aiming to settle quickly in the camp. For example, in 2013 one of the interviewees mentioned that he bought a dwelling in D10 for 1000 JDs after he had decided to marry, as he thought it was inappropriate for his wife to live in a tent. Similarly, at the beginning of 2013, another interviewee moved from the crowded area of D1 to a spacious dwelling in D12. The ability to accomplish this transition was strongly reliant on financial means. As he explained:

I started working at the NGO two months after we arrived, but the salary was nothing ... about 50 JDs. Then the projects got better, and I was determined to move out of this small space to a bigger one ... To support myself financially, I participated in a *Jam'iyyh* [rotating credit and savings association], so I got 800 JDs by the end of the month. I thought 'I need to do something good with that', so I discussed it with my parents, and we decided to move. First, we looked for someone to buy our house ... we found someone, and we sold the whole house for 600 JDs ... We searched and searched until we found this house. The house was inhabited by a woman with her two daughters and they wanted to go back to Syria. We negotiated with them until they agreed to sell the house for 1300 JDs.

As shown here, an exchange of properties was conducted among refugees through word of mouth. However, during the second half of 2013, caravan sellers took on a more significant role in this process due to the soaring exchange value of caravans. Later, in 2016, the business started to decline again when caravan prices dropped drastically, and exchange activities decreased. A realtor expressed his frustrations about his dealings with the caravan market:

People think we own many caravans and make lots of money. That's incorrect. You may find realtors that have one or two caravans and charge about 5 JDs only. That's it! We can't trust caravans anymore because their prices keep changing! When the prices are low, nobody wants to sell or buy ... It is only when prices start to go higher that people start selling and buying ... So, for those who have extra caravans, it's about the right time ... but for those who need new ones ... they always worry that the prices will go higher!

In line with this argument, caravans not only transformed from donated shelters into managed properties, but also turned into economic assets with a high value and their own market. This can be linked to their importance to the process of dwelling construction. As shown in the earlier graph, the values of caravans de-

creased from 2016 onwards, leading to a shift in the profession of the realtors. In addition, the caravan sellers gradually became more engaged in the use of caravans in construction processes. Their role shifted from enabling economic trade and the exchange of caravans, into constructing with caravans.

From a shelter unit to an architectural element

The caravan is a very interesting element, architecturally speaking. It resembles an empty room with a door and few windows. The simplicity of its design allowed it to be versatile and flexible when repurposed and appropriated by refugees in Zaatari camp. As mentioned earlier, the caravans come in two main types: movable and fixed. While the fixed caravans were distributed in small numbers during the later phases, the majority of caravans in Zaatari camp are movable (that is, not permanently fixed to the ground). Their relatively small size (3 x 5 metres on average) and ability to be relocated made the caravan a fluid and dynamic component during the process of dwelling. However, for the caravan to be inhabited, it had to go through a series of appropriations, and refugees had to learn how to inhabit this new architectural typology, if we can term it that. Thus, to understand how the caravan was appropriated and gradually inhabited, it is worth asking: what are caravans composed of and how are they structured?

Details of caravans differ according to the manufacturer. Some are slightly higher, while others are longer. However, they all share the following components:

1. Metal beams

Caravans are built using a simple metal structure that carries the weights of the panels, the flooring and the occupants. According to a realtor, metal beams most often come in two sizes: 8 x 4 cm and 8 x 8 cm. These are arranged into a cubical form that creates the load-bearing structure of the caravan itself. To support the floor, this structure forms a metal grid on which the flooring sheets are added. On the top, the metal structure is slightly tilted in one direction to direct rainwater to the gutters on the side.

2. Caravan sheets (sandwich panels)

If a caravan were to be compared with a single room, then sandwich panels — or what I refer to as ‘caravan sheets’ — would make up the roof and the walls. These sheets generally comprise three layers: two thin corrugated metal sheets with a layer of insulation in between. In some cases, a thin layer of plywood is used instead of the metal layer on the inner face of the caravan. Each caravan has 21 sheets that

differ in size: 120 x 240 x 5 cm or 100 x 240 x 5 cm for the caravan sheets on the sides (walls) and 180 x 300 x 7 cm for the roof. In contrast to the smooth surface of the caravan, sheets can be identified by a ridged corrugated metal sheet on the external side. The assembling of the panels within a caravan is made possible by having female and male edges so they can be joined to make a smooth surface.

3. Flooring

The flooring parts of the caravan are made of wooden sheets placed on top of the metal grid. These often come in a size of about 244 x 122 cm and are approximately 1 cm thick. Moreover, their internal face is usually covered with a thin layer of plastic or *Mushamma*; a form of wall covering that is used to finish the wooden sheets, according to refugees. The material used for flooring is Film-Faced Plywood. Most of the sheets can be identified by a stamp, which makes them traceable in the ways they are later used by refugees for different purposes, for instance to construct kitchens or wardrobes.

4. Additions

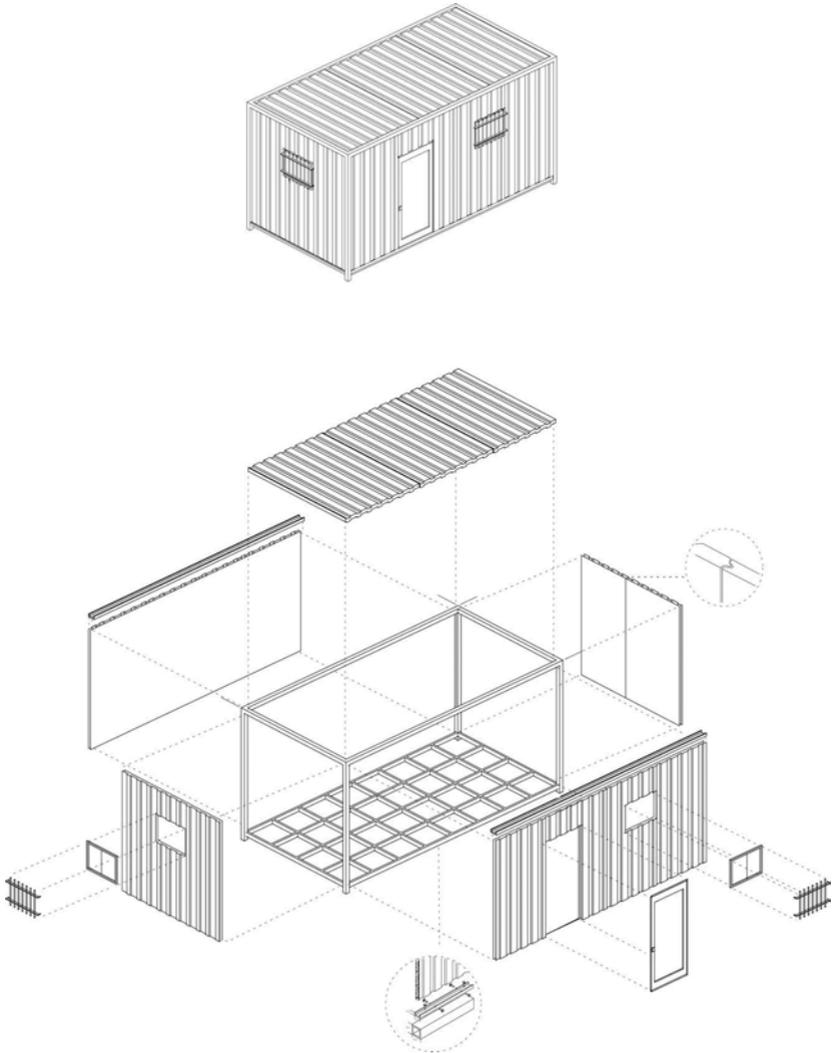
Additions include doors, windows and gutters that are located on the upper sides of the caravan. Windows come in two sizes, 100 x 100 cm and 125 x 100 cm. They come as units that can be detached and attached to the caravan sheets using the female/male connection technique.

By developing an in-depth understanding of the architectonics of the caravan and its anatomy, refugees became experts in utilizing it in the process of constructing dwellings. What was intended to be a shelter unit was transformed into a building component that could be moulded, changed and amended according to evolving needs. In the following subsection, it is explained in more detail how understanding the particularities and components of caravans helped refugees to use them as architectural elements, and how this led to the rise of new forms of spatial knowledge and craftsmanship in Zaatari camp.

Dismantling and reassembling the caravan

Practices of dismantling and reassembling the caravan were most direly needed within the 'old camp', where refugees had to carve dwellings out of the caravans already placed on site. This allows us to project that these practices initially emerged and were developed within the 'old camp', but spread across the whole camp later.

The anatomy of the moveable caravan in Zaatari camp



The elements of a dismantled caravan



Rainwater gutter



Wooden panels (Film faced plywood)



Caravan sheets (sandwich panels)



Window



Metal beams

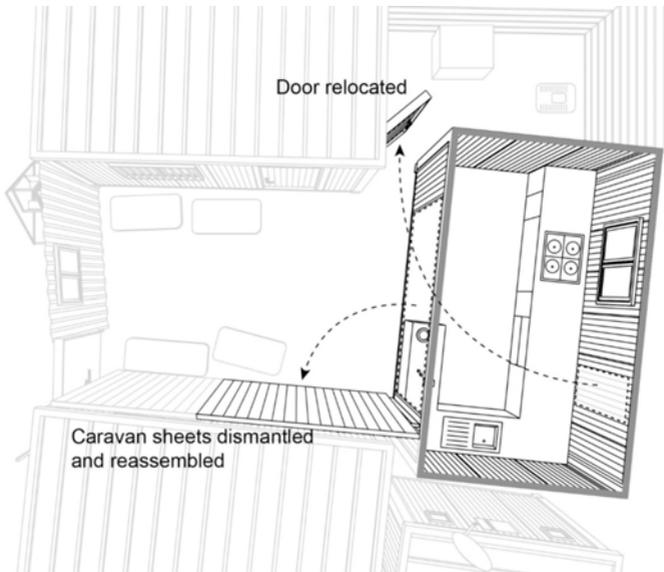


Door

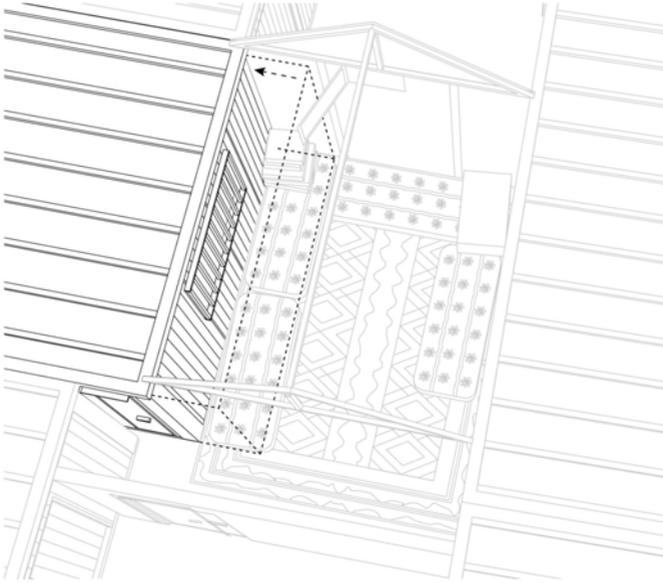
In the first case study, for instance, it was shown that Sami was keen to purchase his neighbour's caravan. While this caravan was adjacent to Sami's emerging dwelling, its door faced the opposite direction, and only the back wall was facing his dwelling. To incorporate it into his dwelling space, Sami first had to dismantle the back wall and replace the door with a caravan sheet so that the dwelling only had one entrance. The rest of the dismantled caravan sheets were used to construct a new wall to separate Sami from his neighbour.

Similar practices were also observed in other dwellings within the same cluster. For example, the house of Sami's cousin was made up of three caravans. While one of them was furnished as a kitchen and bathing area, it intruded into the living area, giving the family less space to meet in. To improve the situation, the caravan was shortened in place with the help of a professional. The caravan was first *dismantled*: One caravan sheet was removed from either side, as well as the roof and flooring. The metal structure was then cut to reduce the length of the metal beams. After removing the sections of the metal structure that were no longer needed, the remaining parts were welded together again, and the caravan sheets were put back. Or better — *reassembled*. As a result, the door of the caravan leading to the kitchen became narrower, yet still wide enough to let people through.

An example of dismantling and reassembling a caravan so it can be integrated into the dwelling space



Caravan reduced in size to expand the salon of a dwelling in the old camp

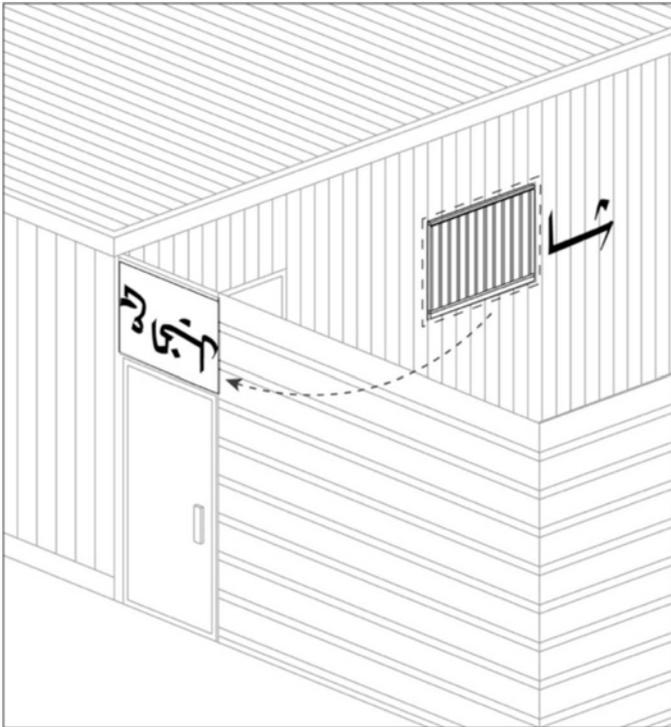


Over time, and due to their importance to dwelling, the practices of dismantling and reassembling caravans spread throughout the camp. They were practiced according to needs, and with more space for implementation. For example, in Omar's case, one of the caravans had only a single window next to the door. As little light could enter the caravan space, he used the emerging local knowledge to appropriate the space: a window from a *dismantled* caravan was bought, and then *reassembled* in his own caravan. It was installed in the corner to allow in more light from the south during the day.

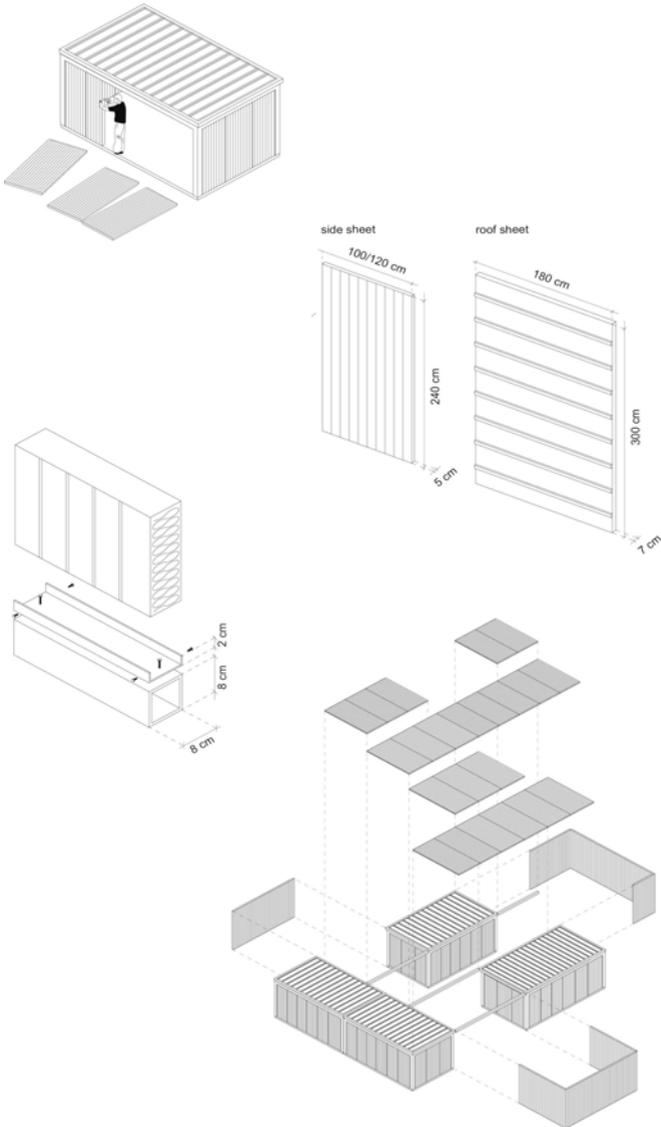
For a normal visitor, these practices may be difficult to notice or even recognize unless talked about. Yet one visually striking example of how dismantling and reassembling practices transformed the camp, both physically and symbolically, can be seen in a dwelling encountered in the northern of the camp. The dwelling happened to be situated on an intersection, where the UNHCR decided to assign a pathway as a street, thus giving it an official name. The name was placed on the side of the dwelling's caravan, facing the street. The following year, however, the family was in need of an external space for their two young daughters to play in. Therefore, parts of the streets were enclosed as a fenced attached garden — a practice common among city dwellers as mentioned earlier — and the street sign was thus no longer visible. Moreover, the family needed more light in their sleeping

room, on which the signwriting had been made. A new window from a dismantled caravan was bought, and was reassembled on their caravan. Consequently, the parts of the caravan where the signwriting had been placed were also dismantled and then reassembled above the entrance of the dwelling, adding an extra layer of privacy. This shows how tracing materials can reveal the ways in which the camp is being dismantled and reassembled. The caravan sheet that was displaying the name of a street — a way of ordering the camp imposed by relief actors — changed location and became the ‘portico’ of a dwelling.

Caravan sheets with signwriting cut from the original caravan to create a window and subsequently placed above the entrance door as a building material



Constructing entirely using dismantled and reassembled caravans produced a new type of 'caravanized' dwelling



Various uses of plywood extracted from a caravan to build a partition wall, a kitchen and a wardrobe



Wardrobe



Wall partition



Kitchen

A gable roof constructed from insulated caravan sheets and using the caravans as a load-bearing system



Building with caravans

Understanding the anatomy of the caravan allowed refugees to use it as a building material. This goes beyond the previously practiced in-place changes that were made to the caravans. However, it utilizes the same emerging local knowledge about the caravan — its quality, materials, details, layers and structures. For instance, one of the main practices is the utilization of dismantled caravan sheets, to be reassembled outside the caravan itself; and by doing so, utilizing the caravan to build walls, roofs, fences and other extensions to the dwellings. To construct walls, for example, caravan sheets are installed on thick metal beams (rectangular or H section) that function as the ‘foundation’. To attach the caravan sheets to these beams, small metal C-section trays, about 2 x 5 x 2 cm, are used. Caravan sheets are inserted into these metal trays, at the top and the bottom, making them attachable to other parts of the dwellings, and they are consequently able to be used as walls, fences and roofs. The shape of these roofs — flat or gable — relates to the type of metal beam structure to which it is attached: either flat by using vertical metal beams, or gable using a welded metal frame.

Another aspect is based on using other elements of the caravan, such as the wooden panels or plywood. These elements are also dismantled from caravans and

reassembled within the dwelling space. In the previous example in which the caravan was shortened, plywood from the flooring was removed and used as a partition wall between the kitchen and the bathing area. Using cement as an alternative flooring material, the plywood was placed on a metal tray and fixed to the ground. Plywood sheets are also removed and reassembled to construct amenities such as furniture and shelves. In Sami's case, plywood sheets were reassembled to create full units for the kitchen, including a long counter, shelves and cupboards. This was installed by a carpenter and was designed to fit the dimensions of the kitchen and serve the daily needs of the family. Moreover, plywood is frequently reused to create wardrobes and other cupboards. These creations can be easily identified by the manufacturer's markings, which is a pattern that can be seen frequently in Zaatari camp and in different parts of the reassembled dwellings. In addition to plywood, windows taken from old rundown caravans can be seen refitted in other caravans or placed in newly installed walls made from caravan sheets.

An extreme form of utilizing the caravan for building is the emergence of 'carvanized dwellings'. These are made entirely out of caravans and the materials harnessed from them. Other common materials, such as metal sheets (zinc), plastic sheets, wooden beams and so on, are less visible and replaced with caravan sheets, which are deemed to be more stable, durable and better insulated. Constructing with caravans as building materials is also associated with a certain 'wealth'. As I was told by a realtor, 'Trust me! Everyone would prefer to have their dwellings constructed with caravan sheets. They are better, and last longer. But only few can afford it!' To give an example, he explained the design of one of these dwellings, which he had recently constructed. It was built in a rectangular form, using four caravans and 52 caravan sheets extracted from a further two and a half caravans. Its ground was then cemented and supplied with the required amenities. The modular nature of the caravan and its dismantled and reassembled parts clearly influenced the layout of the dwelling: its structure was more geometrical, and the dimensions of its spaces were all derived from the container.

The use of caravans to construct dwellings has also engendered a new form of economy. In contrast to the changing prices in the caravan market, the prices of the caravan parts were more stable. For instance, a caravan would produce 21 sheets, each of which could be sold for a fixed price of 17.5 JDs (about 20 euros), amounting to a sum of 367.5 JDs in total — significantly more than the average price of a caravan in 2019 (about 175 JDs). Windows were also sold for an average price of between 10 and 15 JDs. Yet to use them in a dwelling required the help of a realtor or welder, who would charge a fixed fee of 75 JDs. To give a tangible example, the construction costs of the previously described dwelling came to around 6000 JDs (about 7500 euros), according to the realtor. These costs were distributed as follows: 2000 JDs for caravans, 3000 JDs for caravan sheets and metal beams, and an additional cement floor costing around 500 to 1000 JDs. This shows that

while constructing with caravans would produce a neat, well-connected and coherent structure, its implementation required two things: refugees needed to have considerable financial means, and realtors needed to have enough caravans and the knowledge to use them for construction. This explains why this type of dwelling is relatively rare, and why it only appeared at a later stage in Zaatari camp.

The structural qualities of the caravan

In addition to the abovementioned applications, caravans were also used as structural elements. Constituting the most solid part of the dwelling and being based on a stable metal structure, they were used to set up roofs and construct walls. One of the most striking aspects that emerged during field work in 2017 was the spread of a new roof structure, which had only rarely been seen during 2014. Placed over courtyards, gable roofs were developed out of the necessity to respond to environmental factors such as air circulation, sunshine and seasonal heavy rains. Structurally, these roofs were constructed out of metal beams, covered with textile, zinc sheets or caravan sheets, and designed to be placed directly over two opposite caravans. This means that caravans were used as a load-bearing element that allowed dwellings to better respond to environmental needs.

The structural nature of caravans facilitated the enhancement of dwellings, both on an individual and a collective level. In the case of Sami, for example, the density of caravans in the 'old camp' and the need to construct roofing systems produced what appeared to be a collective surface for water management. The choice between gable and flat roofs not only matched each family's needs, but also determined specific channels in which rainwater could be funnelled to then drain away. To accomplish this, the slopes on the surface of caravans were also used. Moreover, efforts to extend pipes for drinking water used the stability provided by the caravans' structures. For instance, the family living behind Sami placed their water tanks in the empty space created in between the two dwellings. In order for them to be filled by a water tanker from the main street, pipes had to be extended over the dwellings to reach the street. This demonstrates that the structural characteristics of the caravan allowed it to function as a load-bearing system, thereby enhancing the quality of dwellings. This could not have been possible without the quality of this material, in comparison with tents for instance.

The material dynamics of reassembling

This and the following chapter focus on uncovering the *material* dynamics of reassembling. In the previous chapter, the social dynamics of reassembling were ex-

plained. Those dynamics encompass a myriad of aspects, such as family relations, gender, religion and sociocultural values. The current chapter and the subsequent one complement this view by highlighting the dimensions that relate to materiality, and how these dimensions influenced the practices of reassembling. In the current chapter it was shown how the caravan — a standardized shelter unit — was transformed from a container space into a contained element within the larger arrangement of the dwelling. This transformative process also symbolically captured what was happening in the camp: the caravan was being dismantled and reassembled, and so was the camp. The inevitability of dwelling as a human need has the capacity to induce spatial and material transformation in refugee camps. This transformation becomes manifest on multiple scales and across various mediums. On the one hand, exploring the material and economic dimensions of the caravan aimed to extend the analysis in the previous chapter and to contextualize the process of dwelling in Zaatari camp. On the other hand, it aimed to introduce the material dynamics of reassembling: another layer that adds to the social dynamics of reassembling discussed in the previous chapter.

The materials brought into the camp — just like the refugees themselves — are intertwined with multiple dimensions that are negotiated during the reassembling process. With regard to the caravan, these dimensions are simultaneously architectural and economical. The architectonics of the caravan are utilized and developed vis-à-vis an emerging reservoir of local knowledge that — probably — exists nowhere else (such as the full utilization of the caravan as a living unit). In architectural schools, students are often encouraged to think of shipping containers as design elements. How can these elements be put together to create different spaces? How can they be appropriated and reused? In contrast to finding answers from the top, on paper and in studios, refugees had to find answers from below. Their everyday encounters with the caravan(s) — noting that there are few different types — forced refugees to find the answers. Knowledge about the caravan, its anatomy, and how it can be dismantled and reassembled were circulated in the camp.

The circulation of caravans in the camp produced a parallel value. According to the date, and the type and quality of the caravans, their prices changed, producing a parallel informal economy. The significance of the caravan for the dwelling process made it a priority for refugees, especially at the beginning. Later on, prices dropped, and a real-estate market emerged, taking over the role of circulating the remaining caravans in the camp, and of dismantling and reassembling their parts in newly constructed dwellings. The prices of these dwellings changed, as the prices of the containers differed over time. The architectural and economic dimensions of the materials are interlinked. A good example of this connection is the answer of a refugee woman who I once asked, ‘why don’t you expand your dwelling here since you have enough space around you?’ She confidently answered, ‘who said that

bigger is better? Bigger means more money to construct and maintain. If you have money, you can go for a bigger dwelling'. The question of scale and size, which were standardized within camp planning, become more personalized here. The material dynamics of reassembling therefore capture different dimensions, such as architecture, structure, quality and economy, and how they relate to refugees' need to dwell. In the following chapter, I will extend this analysis to two dimensions that cannot, and should not, be avoided when discussing camps: temporariness and politics.

