PROJECT MIMPI

REFLECTION

Merve Gündüz 4357043

Master of Science Architecture, Urbanism & Building Sciences

Studio Explore Lab

March 2020 Delft

Motivation

Six years ago, I became an active volunteer in a humanitarian relief organisation. Due to the experiences that I have gained as a volunteer, I had developed a keen interest in humanitarian architecture after starting my study on this faculty. During my bachelor and the first year of my master, I never had the opportunity to gain knowledge and experience in this field. I saw this opportunity in the graduation studio of Health@BK. Due to some reasons this studio was cancelled and I was given the opportunity to join the studio of Explore Lab with keeping the same topic for my graduation project. Joining another studio with this topic was not possible. This would be my first project and experience in the field of humanitarian architecture.

Research Paper

My graduation goal was to explore the best way of approaching a humanitarian architecture project. I wanted to develop skills in order to become able to deal with the 'for me' unknown parameters of humanitarian architecture projects such as location, culture, an unfamiliar target group, climate, materials and building techniques. To do so, I felt the necessity to start my graduation process with a research about successful humanitarian architecture cases. The aim of my research paper was to create a framework with design principles for humanitarian architecture which can be used as a tool to evaluate such projects or as a supportive framework by architects willing to contribute to this field. The need of such a framework was based on the fact that humanitarian architecture is a field which is very open to different interpretations and for free uncontrolled experimentation. This means that defining design principles in humanitarian architecture and creating a framework which can assist architects wanting to contribute to this field is crucial. Especially for humanitarian architects working for various communities in unfamiliar locations and contexts. I too was in need of such a framework to start, control and test my future design(s).

The research paper consisted of three main parts: theories resulting in a possible framework, a case study using the created framework and a revision of the framework. At the end of the first part of the paper, the created framework consisted of five principles: People, Planet, Profit, Place and Process (Figure 1). This part contained the definition, background and the existing theories of humanitarian architecture. After the analysis of the three cases in which the initially created framework was used to evaluate the cases, I felt the need to revise the framework by extracting the aspects of social design from the Process principle and give it an own place in the framework under the name Participation (Figure 2). In all the three cases this principle was one of the most important factors in the success of the projects and therefore needed to be mentioned explicitly. Participation was used to cover the three types of social design: user-centred design, participatory design and cocreation and aimed at creating autonomy for the local people by providing knowledge and teaching skills in research, design and/or realisation.

During the design process, I have used this framework as a supportive framework rather than a checklist. It was impossible to integrate every principle to the maximum extent in the design. At some points there was a need to make a consideration between two principles and choose one over the other because of its priority range. An example is the choice of the materials. The natural and unprocessed version of bamboo is highly fire prone and therefore not recommended to use in urban areas. Therefore, I chose to use steel instead of bamboo for the structural elements of the construction. This of course had a negative effect on the carbon footprint of the design. But by making this choice I considered the priority of the safety of the building, its users and the surrounding as higher than the material sustainability. So the principle People was chosen over the principle Planet.

	People	Planet	Profit	Place	Process
		3	III	0	
Project	(Social) well-being of people	Environmental protection	Financial profit, independence and funding	Local characteristics and values	Planning and collaboration
Case 1,2,3					

Figure 1 First version of the framework of design principles in humanitarian architecture



Figure 2 Revised version of the framework of design principles in humanitarian architecture

Site Research

After finishing the theoretical research, I immediately started with the site research. I already knew that I wanted to design an orphanage in a poor and dense urban area in Jakarta. The choice for both the location and the program was mainly based on my aim to become able to deal with the unknowns of humanitarian architecture. Both the location and program were unknown to me and were in my scope of interest. During my two months stay in Jakarta, I did research on different scales: urban, architectural, technical and social and used different methods: theoretical research, photographing daily life, drawing workshops with children, modelling masses for possible concepts, visiting orphanages and architecturally interesting buildings and interviewing children and local architects¹. During this research I was guided by a local NGO (PKPU Human Initiative).

This research mainly went well. I got a good insight in the daily lives of the locals and collected useful information for my future design. Some of my findings were integrated in the concept, PvE and the overall design of the orphanage. An example is the change of my opinion about bamboo after interviewing a local architect and a representative of the Alfa Omega School.² Because of the fact that bamboo needs a lot of maintenance and is highly prone to fire and therefore not recommended to use in a dense urban context, I decided to change my initial plan to use bamboo for structural elements in my design. Another example is that I noted that every building had a prayer room (Musholla) even if there was a mosque in the same street. Children went to mosques and musholla's to perform the daily prayers without the assistance of their parents. Even though I share the same religion with the majority in Indonesia, I had no insight in this practice. Therefore I decided to make place for a musholla in my design as well.

After coming back to the Netherlands and starting the design, I realised that not everything went that well. I was missing quite a lot of information that I could easily find during my stay. This was especially related with the location. Due to some practical reasons³ I visited the three locations I had in mind in the last week of my stay and was limited in time to collect more information. Another disadvantage of visiting and choosing a project location this late was that I missed the opportunity to start my design on site and get more valuable input from the locals. This weakened the role that social design (Figure 3) was playing in my project, especially within the participatory design part. I also realised that the case studies that I have analysed in my paper were more focused or provided more information about the participation of locals in the realisation phase more than the research and design phase. Knowledge and the right references about the methods of including locals in the design process could have helped me out and strengthened my project.

RESEARCH	DESIGN	REALISATION
User Inspired Design		
Participatory Design		
Co-Creation		

Figure 3 The types and phases of social design

¹ More information can be found in the booklets

² A schoolbuilding in a Neo-vernacular style which gained fame due to the expressive use of bamboo.

³ I was not allowed to visit the locations without company from the local NGO. Two of the three sites belonged to them.

Design Process

Regarding the design, the first challenge was to create a safe and homelike place where living and education could come together. Multi functionality and flexibility of spaces, spaces for smaller and larger activities and opening the building to other locals from the surrounding were also important parts of the design concept. The building needed to be a home for the orphans and provide space not only for them but also for other children and their families in the surrounding. A building that not just occupies space in an existing neighbourhood but also provides the neighbourhood with a place where they can come together, can learn and develop various useful skills. The second important challenge was to construct the building in such a way that it would become resistant to floods, earthquakes and make it suitable for the tropical climate.

The program could roughly be divided into living, education and larger communal activity. The first attempt (presented during P3) did not succeed in making a well mixed design with the mentioned functions. The design was too open (not safe) and there was no proper function mix (Figure 4). Every function was inserted in a unit and therefore there was no flexibility and multi functionality in the design. In the second attempt I tried to solve this problem by putting all the functions in one building with four walls and one roof. Also this concept did not work out. The big space in the building lost the homelike feeling I tried to create. To have a control on the children in such a big space made the mix of the functions harder than before (Figure 5). After two unsuccessful attempts I went back to the drawing workshop I did with the local children in Indonesia. The children got the assignment to draw a building in which they could live with their friends and tutors from the education centre they were going to. All of the children drew a house in this assignment. In the third and last attempt I decided to design an orphanage by designing houses and connect these to each other in such a way that education and living could be integrated in one building (house) with smaller and larger spaces for different activities. In this way the function mix and homelike feeling could be established in a safe way (Figure 6). This concept made it also easier to control the climate and to make the building resistant to floods and earthquakes with using primitive and cheap techniques. Another advantage was the participation of the local people in the realisation phase. In this way they could learn the techniques of making sustainable and disaster resistant houses for themselves too.



Figure 4

Figure 5

Figure 6

In conclusion, the design of the orphanage resulted in a multidimensional design. The last concept made the project into one which can be considered as a prototype on different scales. On the urban scale it shows a proper arrangement of houses around a courtyard with a good relation with the street. On the building scale it teaches how to design flexible spaces by using and constructing standardised elements. On the technical level it introduces a technique to make the building disaster resistant. To achieve this, the framework of design principles created in the research phase was used as a supportive tool to make the right design choices. The site research was the source of the inspiration and the insight in the local culture. The result is a functionally sustainable building that can be used for different purposes and can be easily transformed into houses making it a longterm successful investment. On the other side the technical sustainability as result of its resistance to floods and earthquakes can be considered as a suggestion to local authorities and local people to change the building techniques in order to make the buildings and the people survive the ongoing and increasing disasters.