THE IMPORTANCE OF CONTEXT
Self-Assessment on used Research Methods

Student
Maud Houterman (4633911)
Chair of Architectural Engineering, “EXTREME”
Thesis “The importance of context”

I KILL YOUR DARLING AND RE-PHRASE

In the beginning of the research process for my master thesis I was led by general choices. This made my research process difficult and gave no specific results. After doing research into the context regarding my topic I could define my starting point. I realized that I need some structure in doing architectural research. Coming from Applied Science I was used to base research on facts. However, I noticed that in the field of architecture this can be hard as architecture is a broad activity. It is an ever-developing body of knowledge (Lucas 2016, p. 8).

What I gained from the course is creating a framework of criteria which will help to focus my research. My interested was sparked by the talk on heuristics by Jorgé as it provided me an overall explanation on gaining knowledge in architecture. To add, the lecture of Berkens taught me the importance of context in the designing. Being aware of every step I took in the methodology process helped in decision making. By conducting a thorough literature study my understanding of terminology of research in a design process has been improved. It is this general awareness of the heuristic nature of architectural research that helped me understand the steps I took. However they frustrated me too because architectural research is not easily controlled.

For my master thesis I am enrolled in the Architectural Engineering (aE) studio. Every student defines his or her own assignment and program within the aE studio framework of themes, contexts and research fields (Smit, 2019). The theme that I will be researching is “EXTREME” and the context is Sint Maarten. I choose to design affordable hurricane and earthquake resilient housing. In the beginning my hypothesis was: by implementing a 3D printer it will help Sint Maarten to make hurricane resilient roofs. I categorized this hypothesis in the research field of make.

I spend time investigating the social needs and comparing disaster resilience with other countries. It made me realize that the idea I had from the beginning, 3D printing of plastic roofs, did not met the needs of the locals. Large group of people from Sint Maarten need another income generation to survive after disaster, now they are too depended on tourism. I accepted the challenge to come with a design solution for this economic downfall after a disaster. They need something low tech which can provide jobs. It created a shift in my research. This realization was frustrating as it forced me to kill my darling. The outcome of creating an architectural economic approach for resilient housing led to the research of waste materials in the Caribbean and self-help housing. In order to define a design approach extensive background research is needed on the context.

In this paper the methods are discussed which are used to make the final research question. In this process, local requirements need to be taken seriously. It can be concluded that the fieldtrip to the island was crucial in my research. The lectures and the results of the fieldtrip made me realize the importance of context. My research question for the research paper ended up being: *“*How can plastic waste sandwich elements be made by locals and be implemented in hurricane resilient roofs on Sint Maarten?”

II UNDERSTANDING THE NEEDS

As a result of previous research in my applied science study regarding 3D printing and plastic, I was consistent in using both to make resilient roofs for Sint Maarten. However, to create a design for resilient roofs on Sint Maarten I had to consider the context. The fieldtrip to Sint Maarten has given me the chance to gain a deeper understanding of praxeology, the study of human action and conduct by observing and obtaining firsthand information (Berkers, 2019).This study can be divided into two type of research: emic and etic research. Emic research is performed within a culture. This type of research is conducted on the island by analyzing damaged houses and speaking with the homeowners. Emic research became important in defining my research question and forming the etic research. Etic research is scientist oriented (Lucas, 2016, p. 10).

To fully understand the social needs, the real life environment needs to be researched. This practice is called ethnography (Lucas, 2016, p. 11). I observed the context and interacted with the local community. Because this is observed from the architect’s point of view the research can be considered as a subjective method. The ethnographic approach helped me to understand and develop the design problem.

The emic research allowed the context to take the lead in my research process (Lucas, 2016, p. 10). I tried to understand the uniqueness of the place. By regarding the context of Sint Maarten and the natural disasters it has to cope with in the past and present as a type or a case study, my understanding of the uniqueness of this place has deepened. Hurricanes and earthquakes are not only common in the Caribbean as I referred to similar cases in China, USA, Chili and Haïti. The events of these natural disasters can be seen as a repeating pattern and allows a typology of disaster resilience to be established (Lucas, 2016, p. 12). A type is defined by Moneo as: *"a concept which describes a group of objects characterized by the same formal structure"* (Moneo, 1978). These objects have certain similarities. I wanted to explore the ways other countries cope with housing needs after a natural disaster in order to have a better understanding of the possible impact an architect can have. A multiple case study enables the researcher to explore differences within and between cases (Baxter & Jack, 2010). I compared Sint Maarten with China, USA, Chili and Haïti because they have similar natural disasters and their disaster response differs. I placed Sint Maarten in an existing chart with existing case studies (Comerio, 2014). Doing this qualitative research and placing it in one chart clarifies the results. I shared my findings with Martine van der Does form the UN and Red Cross on Sint Maarten to clarify the position of Sint Maarten (SXM) in the chart (figure 1).

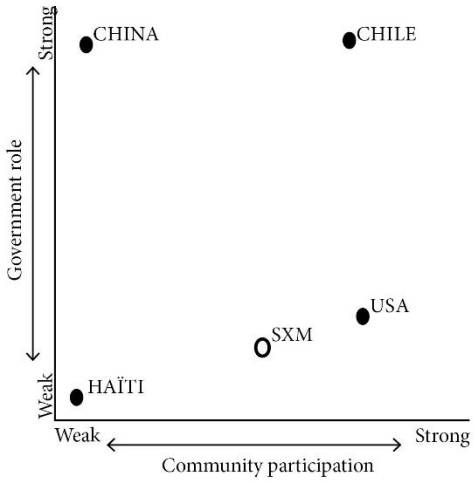

Figure 1. Comparison of disaster resilience in 5 countries (Own work)

As can be seen in my research process (figure 2) understanding the context by ethnographic research (emic research) and transforming the context into a typology (emic research) has both seemed to be important to form a refined research. From this can be concluded that Sint Maarten needed a community based approach with support of the government. This meaning a longer building chain to provide more jobs.

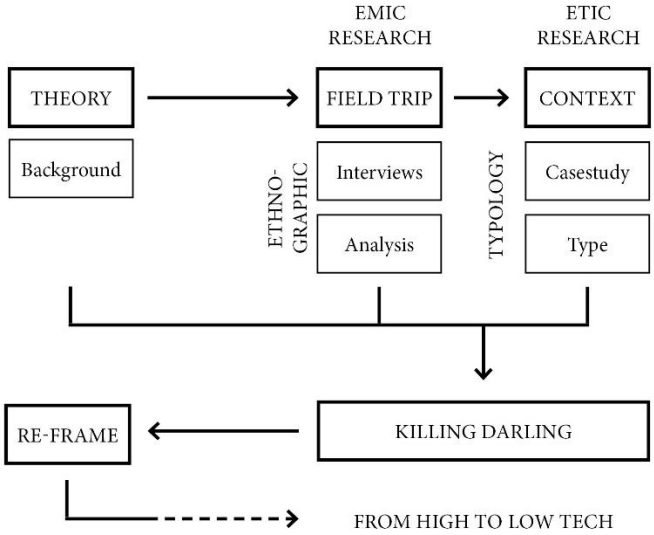

Figure 2. Own research process. (Own work)

III. SOCIAL UNDERSTANDING IN ARCHITECTURE

The design approach used for designing houses in Sint Maarten differs from the approach used in the Netherlands as circumstances are different. In the context of Sint Maarten I consider myself an outsider in the knowledge of the built environment. To add, I want to implement a socio-economic factor to the project. Therefore, it is important, for my final design, to investigate social practices. Over the years architects have looked at the use of spaces by people. Anthropology documents human behavior and is therefore a meaningful tool for architects (Jasper, 2016). Understanding the close relationship between architecture and anthropology will help me in forming a future approach for designing housing. And formulate my opinion about the importance of the user.

Architectural anthropology takes an active role in examining the complex relationships between people, culture, and the built environment over time (Memmott, n.d.). A user is described as someone who uses a product, machine, or service (Cambridge, n.d.). Lefebvre was concerned about the category 'user', and saw it as a device of modern society. It made the user abstract, which assumed that race, nationality, gender, social class e.g. of all the users are the same (Hill, 2001). Modernism stood for standardization, homogeneity and production.

Theorist of modernism, Gropius, promoted standardization in architecture. He thinks that the usage of a house begins when the architect's involvement in the project ends. Forty argues the role of the architect on usage and writes about this statement of Gropius: "*Gropius articulated that the architect's ultimate concern in designing buildings was their human use and occupation, and the reality that the architect's involvement in a building ceased at the very moment that occupation began. The incorporation of 'flexibility' into the design allowed architects the illusion of protecting their control over the building into the future, beyond the period of their actual responsibility for it (Hill, 2001)."*
The architectural approach has his influence on the future usage of the project. Avermaete describes the varied architectural positions and approaches towards the public: *"Across currents, styles, and idioms architects have played the part of syndicalist who questions the social status quo, of populist who challenges professional conventions, of activist who fights for spatial justice by transgressing the action boundaries of the profession, and of facilitator who engages inhabitants to realize an ambitious individual project"* (Avermaete, 2010).

A building is flexible if it can adapt to the changes in use. An example is Rietveld Schröderhuis in Utrecht. The first floor can either be a large open space or changed into small spaces by the moving walls. The flexibility lays in the relationships between the spaces and therefore the privacy. It again emphasizes the role an architect has on the use of a space. Ergonomics is a process for designing spaces so it fits for a human beings. This can be seen from the work of Bruno Taut which is discussed in the lecture of M. Berkers. He describes a successful environment only when it is 'full', this can only be created with human beings (Ardizzola, 2017). The task of the architect is thus to mediate between the projects and his values. The project should enhance the quality of human life. For this research Taut constructed his own house.

The time after 1950's brought diversification, fragmentation and consumption. The urge to define the relation between architecture and the people received a new impetus (Avermaete, 2010). Architectural culture gained a renewed interest in the public. An architect can develop an eye for the actual users of the building and not the imagined ones by studying the praxis (Berkers, 2019). The interest in participation in the building process led to the development of practical methods for involving residents in decision-making, planning and design.

I see the importance of understanding the user, seen as individual. Seeing users not as one human being creates the need for flexibility. However it creates difficulties to meet the needs of all individuals. I have my doubts about the contribution of users in the design process. Especially in the case of Sint Maarten where disasters strike. A disaster resilient house needs some building expertise. This can be done with a building guide for example, made and shared by Red Cross on Sint Maarten.

IV GOING FORWARD

The lectures of Jorgé and Berkers helped me in my research. The lectures were interesting in general by providing a different view on the field on architecture. However, I noticed that the process became more difficult as in the past I made choices based on my own intuition and as a result of these lectures

I started to think about every step. More practice in this field will help me in the future. My research was led by a general literature research in the beginning. Although I was always interested in the relation of user and building I was glad to find out the difference between etic and emic research.

In the study of anthropology, ethnography should take years of study. And therefore, in my opinion, for an architect it is difficult to fully understand the needs of the user. So how could architects continue to sustain their traditional role as form givers and controllers of human environments? (Hill, 2001). This should be possible with the practice of ergonomics (Berkers, 2019). It can be concluded that, to make social qualitative research, the fieldtrip of 3 weeks was too short to fully understand the problematics. To add, the fieldtrip took place in the third week of my graduation which meant that there was a short time for preparing. Questions that need to be addressed before such a field trip are: How can a good framework be developed at such a short time? How do you find criteria for the interviews? How can you make qualitative decisions in the field of architecture?

The hypothesis I had in the beginning of the master thesis was that 3D printed resilient roofs of plastic will help the community. The emic research made me realize the big need for resilient roofs and affordable housing. It also gave an inside on the local community and the importance of tourism as urgent income generation. My tutor asked me, what is the impact you want to create? How will the people benefit from your resilient housing? Is it something that the government form the Netherlands will organize or is it something that is organized form the local community? These questions triggered me to look into other countries and there disaster resilience. It was the etic research that in the end shifted my research towards a socio economic research. In my research I placed Sint Maarten in a chart to relate the island to other countries who face with disasters. I verified my placements with two experts in the field of humanitarian aid. However I did not reviewed the position of the local people. There is a possibility that they will position Sint Maarten at a different place. So, in the future it is important to confirm the findings with both the locals and experts.

The general approach of the studio is for each student to formulate their own theme, context and research field. I thought this studio would lead more into practical research. However I noticed that beforehand some emic research is necessary. The introduction of the graduation gave a research by design scheme (Smit, 2019). Context, technique and program are needed to further define the research question. It can be concluded that the position of context at the top is rightly placed in my research. The final research question is based on my thorough social research.

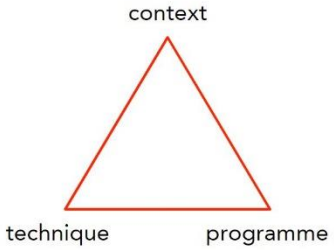

Figure 3. Research by design. (Smit. M. 2019)

As previous discussed architects can have different positions and approaches. I would put my discussed methods and personal position into: architect as a facilitator, because they all had the end goal to have a better understanding of the local community. I think that the architect is not superior to the user but should facilitate possibilities by investigating social practices and share his knowledge. In my future architecture designs I want to fulfill an important societal role. I think it is important to think of a project as the possibility to grow into the future, its flexibility. I do not see the user as a threat to the status of the architect but rather the change to see how users can have the ability to transform a space.

BIBLIOGRAPHY:

Ardizzola, P. (2017). Architectural practice and theory: the case of Bruno Taut's house in Berlin-Dahlewitz. *VITRUVIO - International Journal of Architectural Technology and Sustainability*, *2*(1), 45–56. https://doi.org/10.4995/vitruvio-ijats.2017.7496

Avermaete, T. (2010). TheArchitect and thePublic: Empowering People in Postwar Architecture Culture. *HUNCH14 Publicity*, 48–63. Retrieved from https://brightspace.tudelft.nl/d2l/le/content/192743/Home?itemIdentifier=TOC

Baxter, P. E., & Jack, S. M. (2010). *Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers*. Retrieved from: https://www.researchgate.net/publication/228621600_Qualitative_Case_Study_Methodology_Study_Design_and_Implementation_for_Novice_Researchers

Berkers, M. (2019). Praxeology 1. *Research methods lecture 2*. Delft

Camebridge. (n.d.). Camebridge Dictionary. Retrieved 19 November 2019, from https://dictionary.cambridge.org/dictionary/english/user

Comerio, M.C. (2014). Disaster Recovery and Community Renewal: Housing Approaches. *A Journal of Policy Development and Research,* 16(2). Retrieved from: http://www.huduser.gov/portal/periodicals/cityscpe/vol16num2/ch3.pdf

Hill, J. (2001). The Use of Architects. *Urban Studies*, *38*(2), 351–365. Retrieved from Brightspace, TU Delft.

Jasper, A. (2016). Anthropology and Architecture: A Misplaced Conversation (Part 2). *Architectural Theory Review*, *21*(2), 111–113. https://doi.org/10.1080/13264826.2017.1373412

Lucas, R. (2016). Research methods for architecture. In R. Lucas (Ed.), *Introduction: What is architectural research?* (p. 7–14). London, United Kingdom: Laurence King Publishing Ltd.

Lucas, R. (2016). Research methods for architecture. In R. Lucas (Ed.), *Chapter 2: Defining your research methodology.* (p. 36–45). London, United Kingdom: Laurence King Publishing Ltd.

Memmott, P. (n.d.). Architectural Anthropology: Developing a methodological framework for Indigenous wellbeing. In U. Unkown (Ed.), *Unkown*. Retrieved from https://www.academia.edu/33493135/Architectural_Anthropology_Developing_a_methodological_framework_for_Indigenous_wellbeing

Moneo, R. (1978). On typology. *Oppositions, 12.*

Smit, M. (2019). *Brightspace.* [Presentation slides]. Retrieved from: https://brightspace.tudelft.nl/d2l/le/content/192766/viewContent/1536766/View

ILLUSTRATIONS:

Figure 1. Houterman, M.M. (2019). Own work [chart]

Figure 2. Houterman, M.M. (2019). Own work [diagram]

Figure 3. Smit, M. (2019). *Research by design* [illustration]. Retrieved from: https://brightspace.tudelft.nl/d2l/le/content/192766/viewContent/1536766/View