

Reflection Paper

'A Relief to be relieved' by relieved Community

A building learning centre

Promoting hurricane-proof building knowledge among communities on Sint Maarten

A way to optimised and self-sufficient disaster relief on Sint Maarten (and beyond)

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Aspect 1: Relationship between research and design.

The primary objective of the research is to not only manifest the gigantic challenges of recovering after hurricane Irma which took place in 2017 but also to point out the socioeconomic disarray in the island before the hurricane itself.

Irma clearly had a tremendous influence on numerous issues. However, the island had been struggling with many problems (e.g. climate, politics, economics and many social issues) far beforehand. Consequently, the recovery program is still extremely difficult as the rebuilding/construction issue is not the only problem calling for resolution. Destroyed buildings and people struggling with rebuilding their houses are only the tip of the iceberg.

Sint Maarten's history is strongly interconnected with natural disasters and - simultaneously - lack of proper governance and preparedness plans against more and more frequent hurricanes in the region. The above context triggered my interest in disaster relief methods and post-disaster projects which, later on, formed the base of my design.

Researching into the best possible contemporary disaster relief frameworks through both theoretical and practical (case studies involving community analysis) lenses, showed effective ways of tackling natural disaster related problems. This also helped with designing a solution that results in effective community based relief. Therefore, the community is the core of my project - its knowledge, skills and willingness to work alongside with partnerships between the public, private and not-for-profit sectors.

Thus the outcome of my research is directly translated into the design by creating 'a building learning centre', an institution which promotes hurricane-proof building knowledge among communities on Sint Maarten. The centre helps to create an optimised and self-sufficient disaster relief on the island and - hopefully - even beyond. The long-term goal is to enable gaining knowledge around building methods which would be held by skilled construction workers. These people would gradually improve building environment over the years. This will eventually contribute to minimising damages with every hurricane to come.

The research was a base for developing the project, including its function and school' program. The institution is a collaboration between government (funding) and professionals (architects/teachers and engineers/teachers), who work together on developing hurricane-proof building methods. The building learning center contains two elements - school and advisory zone. The building learning center contains two elements - school and advisory zone. Both parts of school (consultation and school) are led by the same professionals. The school part hosts students attending two year programme with three different phases of the learning process. The first semester focuses on theoretical knowledge and the second one on practical aspects taking place in a workshop zone of the school. Students will learn how to work with materials and tools provided by the government. Additionally, underprivileged local people who use the school's advisory services would be able to get materials made by the students. The third phase of the programme provides additional help to the local community. This phase takes place in the field and consists of two semesters. The schooling method is based on two elements, working in actual construction zones as well as helping local people with sourcing materials or simply providing skilled construction workers to rebuild their homes. To sum up, the school does not only provide skilled construction workers but also helps by advising, supplying prefabricated concrete/wood materials for those who cannot afford it and helping to physically rebuild houses.

The centre's design and program are both based on the effective disaster relief elements. They bring knowledge, contains co-planning and co-designing aspects, which - as a consequence - create trust within the community and other actors. Locals who use advisory services of the school are involved in all phases of rebuilding their homes (i.e. design, hands-on help and building phase). All the above can

be accomplished by creating an on-spot fixed building, which hosts facility working on the resilience (the building learning centre) and at the same time building itself being a community facility as an asset-based design. This creates self-reliant communities that focus on the long term redevelopment and growth. Moreover, individuals become motivated to professionally engage with humanitarian aid.

The inspiration of hurricane preparedness and post-disaster projects not only aims to deal with the 'tip of the iceberg' problems but also to create a long term strategy.

Aspect 2: Relationship between your graduation (project) topic, studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS).

The topic of Sint Maarten in Architectural Engineering studio is focused on tackling a broader problem of poor and slow outcomes of reconstruction attempts on Sint Maarten. It is one of many topics within architectural faculty - and not the only one - which points out current and most crucial issues in building environment. On top of the above, this project attempts to solve social, political and economical aspects parallel to the design.

In the post-disaster context of Sint Maarten the issue is the same. The solution can be provided by understanding the existing problems on the island to later on find the most prominent and suitable methods of disaster relief programs. It aims to find the most effective approaches to be incorporated in the Sint Maarten context.

Aspect 3: Elaboration on research method and approach chosen by the student in relation to the graduation studio methodical line of inquiry, reflecting thereby upon the scientific relevance of the work.

The Architectural Engineering studio emphasises the importance of research and exploration of the "why" questions. The reasoning behind projects become crucial part of the design and research is always a part of the line of reasoning. This shows a project as a 'problem to solve' and clearly becomes a research based design.

Therefore, my choice of theme to analyse was focused on the long term strategies and solutions within the field of disaster relief (due to lack of effective disaster relief on Sint Maarten). The identified gap pushed me into theoretical research and post-disaster exemplary projects in different contexts. The void in one area of the world could be filled with inspirations and efficient elements from the other places. This means that the research can be a starting point for the research based design, even though issues which were analysed are location agnostic.

Aspect 4: Elaboration on the relationship between the graduation project and the wider social, professional and scientific framework, touching upon the transferability of the project results.

My design, in order to be meaningful in its result, had to focus on things which don't exist in Sint Maarten (i.e. effective disaster relief). This particular approach explores methods and key factors of governing/planning/reconstruction by engaging local population in the long term. All of these elements, although linked to architecture, relate to management issues or even politics.

Without understanding broader aspects of the researched post-disaster projects - theory on the disaster relief methods - I would not fully grasp case studies and why they are effective. The goal was not only to research a building itself but rather to investigate and explore its background. It traces back all the actors involved, including architects, community, volunteers, consultants, non-governmental organizations (NGO's), government members, investors and other parties. Each case study is trying to

find out when and at which particular stage of the whole building process the actors were involved and how they relate to the effectiveness of the project.

My project stands for a mix of disciplines which are - in fact - always interconnected, whether we want to see it or not. The post disaster project could be a perfect example. The goal is to solve a deeply rooted problem, not just to clean a shallow surface.

Aspect 5: Discuss the ethical issues and dilemmas you may have encountered in (i) doing the research, (ii, if applicable) elaborating the design and (iii) potential applications of the results in practice.

When writing the research paper and conducting analysis, I tried to create a framework (checklist) for an efficient relief programme that engages local population. In this case, my graduation project is based on existing theoretical frameworks and analysed case studies which try to create effective humanitarian relief. However, incorporating those ideas on Sint Maarten, turned out to be a real challenge. As mentioned before, the devastating outcome of the hurricane and its slow recovery was the direct result of bigger issues on the island - poor governance, politics and lack of preparedness plan in case of clearly frequent hurricanes. Therefore, the challenge was to find a solution which would be more self-sufficient, less dependent on the external help and to provide a design which could prevent future damages by creating stronger built environment. The aim is to create an environment which would become entirely independent from government and its many political controversies.

The school's program and specific knowledge of 'hurricane-proof craftsmanship' could help in creating communities that actively participate in strengthening and speeding up the recovery time after possible future disasters in Sint Maarten and beyond. The design would not only bring potential relief programme - the building learning centre - but also a way for diverse income generating solution for local communities. The programme of the school includes also traineeship which enables locals to combine employment and training in order to gain a nationally recognised qualification. In this way many people, who struggle economically, could gain new opportunities. These contribute to creating financial stability and help with rebuilding homes faster after hurricane.

The relief method (i.e. building learning centre), merged with economic diversification program, would hopefully provide people with knowledge and experience in order to become more self-sufficient and less dependent on outside help.