Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences

Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners (Examencommissie-BK@tudelft.nl), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

Personal information	
Name	**Leyla van der Waarde**
Student number	4780442

Studio		
Name / Theme	Explore Lab	
Main mentor	Aleksandar Staničić	Architecture
Second mentor	Caroline Newton	Urbanism
Argumentation of choice of the studio	Coming from Izmir, Türkiye, my origins have made the threat of an earthquake potentially affecting my family, a part of my whole life. While growing up, I heard my family talking about earthquakes, and fearing them. I always thought: Why be scared of them? Is this building not safe enough? In February 2023, a devastating earthquake hit another part of Türkiye, Kahramanmaras and Hatay. Witnessing the immediate aftermath of this disaster, I took the initiative to form a foundation, called the *Architectural Recovery Team*. In this foundation, a group of students came together to see how we could help rebuild the villages around Hatay, which were affected by the earthquake. This included a visit to the earthquake area. This raised many questions. I thought about how the scale of the consequences of this disaster could be minimised. Next to that, I was fascinated by the engagement of local communities and individuals who came together to help each other. Figure 1.1 shows a drawing of my observations during one of the field trips, where the children from the village wanted to help us document the rubble and empty plots. They were eager to learn how the rebuilding would take place. For us, this was a learning point. We could learn from the children how they experienced the earthquake, how they were living at the moment, and how they were looking at their futures. My fascination for this topic has become my graduation theme, and the studio Explore Lab allows me to explore this theme in my own way. I am curious how I can learn from these communities in disaster areas, and implement the learning points to prepare for other earthquake-prone areas, like Istanbul, also focusing on the psychology of people to stimulate them to prepare for disasters.	

Graduation project	
Title of the graduation project	**Spaces of Hope |** In what ways can community spaces be used to foster preparedness among residents in anticipation of a predicted earthquake in Istanbul?
Goal	
Location:	Kucukcekmece, Istanbul
The posed problem:	Earthquakes are a global phenomenon, occurring irregularly and varying in magnitude in various regions. The impact of earthquakes, however, differs significantly on multiple scales. It depends on the magnitude, the location, and social and economic factors. The result of earthquakes, or other natural hazards, is called a disaster, as the UNISDR (2009) describes it. Jenny Chandler, Alpine Fault magnitude 8 research assistant, explains that although it feels like earthquakes have been happening more frequently over the last couple of years, this is not the case. The number of earthquakes has not increased, however, the disaster caused and people affected by earthquakes have. This is mainly because of overpopulation and the density of major cities (Chandler, 2018). While earthquakes are a global issue, some cities, like Istanbul, are particularly vulnerable. Marco Bohnhoff, a German earth scientist, describes it as: *"Experts are in no doubt that the Bosporus metropolis, with its population of at least 16 million, is facing a major earthquake. The question is not if it will happen, but when?" - Marco Bohnhoff (2023)* The vulnerability of Istanbul is due to its position on top of active fault lines, next to that the city also faces other complex risks due to the high population density, and its political and

	economic situation (Müller-Mahn and Everts 2013). Relevance of the topic: An earthquake struck the easter part of Türkiye in February 2023, leaving millions of people homeless and Antakya as a ghost town. Many Turkish citizens are now scared that the same will happen in Istanbul. However, preparation efforts are going slowly due to many different factors.
research questions and	In what ways can community spaces be used to foster preparedness among residents in anticipation of a predicted earthquake in Istanbul?
design assignment	My design focuses on creating a community space in Kanarya, Istanbul, with two main aims. The primary goal is to establish a hub that not only develops daily life for residents but also contributes to the overall development of the area, creating employment opportunities. The community centre aims to provide inhabitants with a daily goal that aligns with the community's needs. With these requirements, the community space in Kanarya will include a market area and workshop spaces. Here, residents can grow food, start crafting projects, such as knitting, and have the opportunity to sell their creations, which aims to provide economic growth within the community. Additionally, the design addresses the need for a safe space that serves the daily requirements of the residents but also functions as an emergency area during disasters (based on the AFAD designated areas), serving as a gathering point for the community before, during, and after disasters, in this case, earthquakes.

Process

Method description

Methods

My fascination for the topic of post-disaster recovery and architecture for emergencies started before but developed after the Kahramanmaras earthquake. During many discussions and talks with people from the area, the likelihood that this earthquake was going to happen was known, and the effects

this disaster would have were shared. However, no action was taken beforehand on a governmental or community level, which resulted in the great destruction in the area. These problems made me wonder why inhabitants of a city where the likelihood of an earthquake happening was high, would not prepare beforehand. This is how I came to my research question and started by looking into literature about preparedness and the psychology behind preparedness, and the built environment. This also made me wonder how Istanbul, where it is known a disaster will happen, has been preparing for an earthquake.

Literature Research

A preliminary literature research study was done, focusing on the themes of preparedness for natural disasters and how architecture and the built environment can stimulate people to take action. This study focused on a broader area, and took three case studies into account. While researching, conclusions were made about possible architectural interventions that could be used in a design process. However, during the literature research, various variables were also needed to take into account before concluding a design process.

First of all the space: The general development of a neighbourhood influences the quality and the amount of preparedness that has started in an area, this also depends on the amount of space there is in the neighbourhood.

Secondly, the culture and daily habits of inhabitants, need to be taken into account when looking at the preparedness of communities, but also how communities have been responding to disaster and disaster warning this far. These conclusions were taken partly after reading various literature researches, and comparing them with the post disaster communities in Kahramanmaras.

In order to answer these variables, other methods were used during the research.

Personal Observations

Direct observations were conducted in both Antakya, post a disaster setting, and in Istanbul where a potential disaster is predicted. These firsthand experiences provided valuable insights into the practical knowledge of preparedness in different contexts. Besides these observations, observations were made to learn more about the daily habits and needs of the people in Kanarya, Kucukcekmece, where the final design will be made.

Data Analysis

Data obtained from municipal and governmental research on the predicted earthquake scenario, with a magnitude of 7.5, was used for a thorough analysis, in order to chose a location for the design. This data was then compared with personal observations to draw connections and insights about a program of requirements for a potential design.

Talks with experts in the field

While working on the rebuilding after the earthquake, conversations were held with professionals in architecture, construction, and other diverse disciplines during visits to Antakya. Additionally, discussions with architects and constructors in Istanbul helped to get useful insights for my research and design location. Next to that, talking to academics and practitioners in the field, helped to strengthen my arguments in the research and helped me to define a program of requirements for my design.

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Reflection

My graduation focuses on the different themes which I have explored during my master's program AUBS. First of all, looking at buildings in extreme conditions, from an engineering point of view, or looking at the social impact a neighbourhood has on the residents, are themes I have studied during the last year. To combine these two topics, I have developed an interest in the relationship between the built environment and its impact on individual or community psychology.

My graduation project, which is based in the course Explore Lab, gives me the opportunity to look into a topic which stems from my personal fascination. Because of this, I had the opportunity to look at the problems occurring in Istanbul on an urban scale, and on an architectural scale, and combining them with a completely new discipline, psychology. The project, is currently centered in Istanbul, however this topic can also be analysis in different areas, cities or countries. The broader scope of my work address homelessness coming from various human or natural disasters, and hopes to creating safe spaces for those displaced.

In the larger societal, professional, and scientific context, the relevance of my graduation work becomes evident when looking at the frequency of global disasters. As architects, or designers, it is our role to empathize and understand the needs of affected communities, and play a role in creating solution which aim to create safety and resilient cities.

On a personal level, my work connects with the work I am doing next to my studies, as I am involved in the reconstruction of Antakya, Türkiye. Through the foundation I started, the Architectural Recovery Team, I am working on designing and constructing earthquake-resistant modular homes while working with the local communities. This experience provides insights into the daily challenges faced by those affected by disasters, and the role I can play in this recovery process.