Miltiadis Filippos Christodoulakos

Reflection

Shipyard Spectacles: A theater for Marmara

Aspect 1. What is the relation between your graduation project topic, your master track (Ar, Ur, BT, LA, MBE), and your master programme (MSc AUBS)?

The graduation project is situated in a unique environment where processes of an industry have dominated the location and have created not only an intriguing spatial condition but also a fascinating border condition in relation to the city of Istanbul. As mentioned before, the studio emphasizes on spatial situations that have received little attention in contemporary architectural discourse and I believe that the Shipbuilding region of Tuzla is such an example. As architects, it is critical to have a broad awareness of the built environment's various spatial conditions. Thus, analyzing industries and their typology, where several actors (government, private stakeholders, the public) impose significant effect, is of extreme importance. Moreover, the project investigates new opportunities to recycle available material from retired ships and even repurpose parts of them, thus introducing new functions rather than discarding them in the coastlines of the Middle East. Industries like shipbuilding and ship repairing fall under the Maritime industry which is currently one of the biggest contributors of CO2 emissions globally. Integrating a more circular approach and implementing new strategies across the sector can create more opportunities and benefits for the particular industry and other ones.

Aspect 2. How did your research influence your design/recommendations and how did the design/recommendations influence your research?

As a starting point for the graduation project, a collaborative framework based on Istanbul's vast infrastructural system was used to create a collective spatial condition territorial map of the proposed canal Istanbul. The framework emphasizes non-linear thinking thus avoiding topic simplification and generalization. The scale and focus of the drawing helped to better understand the context of Istanbul in relation to its infrastructure and get closer to the leading industry of the country; construction.

Moving on to the individual part of the graduation, I proceeded adding a theoretical framework background to address the superimposed topography and city scape. Using André Corboz's notion of 'The Land as Palimpsest' I continued my analysis via a similar lens and resulted in a catalogue of drawings techniques that can represent such superimposed palimpsest environments like Istanbul. The above methodological approach proved to be very helpful in addressing the complex spatial condition of Tuzla Shipyard. By superimposing all the activities and operations of the industry both on land and water, I identified certain opportunities and problem that allowed me to intervene on site.

During the study trip to Istanbul, I visited the Tuzla shipyards. Even though it's a highly surveillanced area, I managed to conduct a holistic site analysis, documenting the movement of people, trucks and ships. Moreover, I got the opportunity to interview Asli Odman, a researcher based in Istanbul who conducted a survey at the shipyard-level in DESAN Shipyard in the Tuzla shipbuilding region back in February 2008. Ms. Odman not only gave me insights of the industry but also got me in touch to DESAN Shipyard where I had a two-hour tour of the facility and got the opportunity to interview the Safety Manager of the yard, Mr. Fatih Cimen.

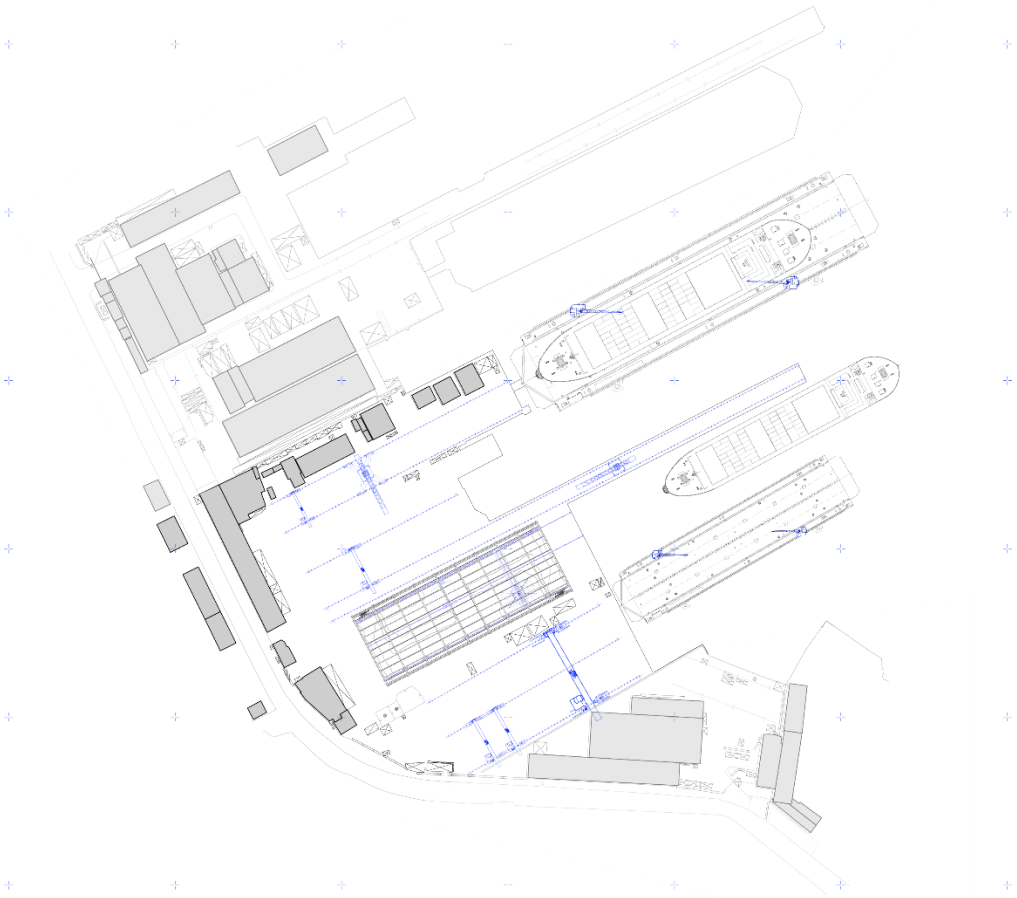

Figure 1. Shipyard Organization: Amalgamation of different mechanisms and processes.

The above research was not only used to better understand and analyze the operations and spatial conditions of the Tuzla region and the shipbuilding industry but also heavily guided the design decisions of the project intervention. As the site is a very busy industry that relies on the operation of various attributes such as transportation of materials and parts, construction and repairs of ships and constant movement of machinery and infrastructure the intervention can only co-exist with this environment only when its carefully and harmoniously designed and positions with the immediate context. Since the project

is introducing to the site newcomers that are outsiders from the industry, a careful consideration of health and safety has been employed throughout the design decisions, routing and program.

The design decision to reuse materials from the industrial site instigated to employ a construction method strategy for the project that is heavily guided from circular economy. The following decision sparked a new research influence related to the project that expanded the scope of the project addressing the current issues for a more sustainable built environment. A shipyard is a very busy and complicated site both in terms of flows and operations.

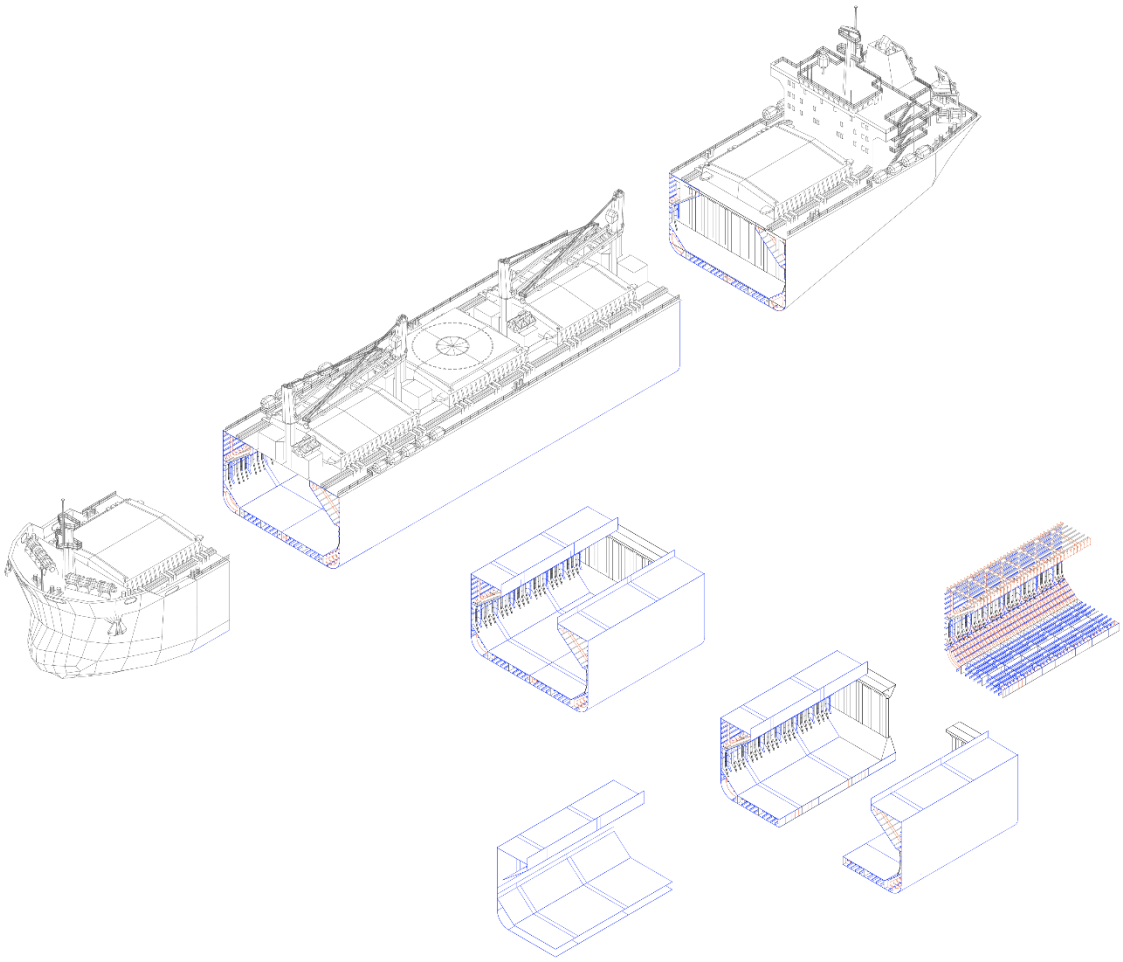

Figure 2. Ship Disassembly Strategy: Dissected into volumes, linear elements, and surfaces.

The site is viewed as an endless material source that constantly expands from the retirement of ships. Relevant R-Strategies found already on site and in the operation of the shipyard are R3 Reuse, R4 Repair,

R5 Refurbish, R6 Remanufacture. However, there is a big opportunity to include R7 Repurpose and R8 Recycle. The project thus emphasizes creating new possibilities to treat the available resources to create new function for the discarded product or its parts and even process these materials to obtain lower or higher-grade value out of them.

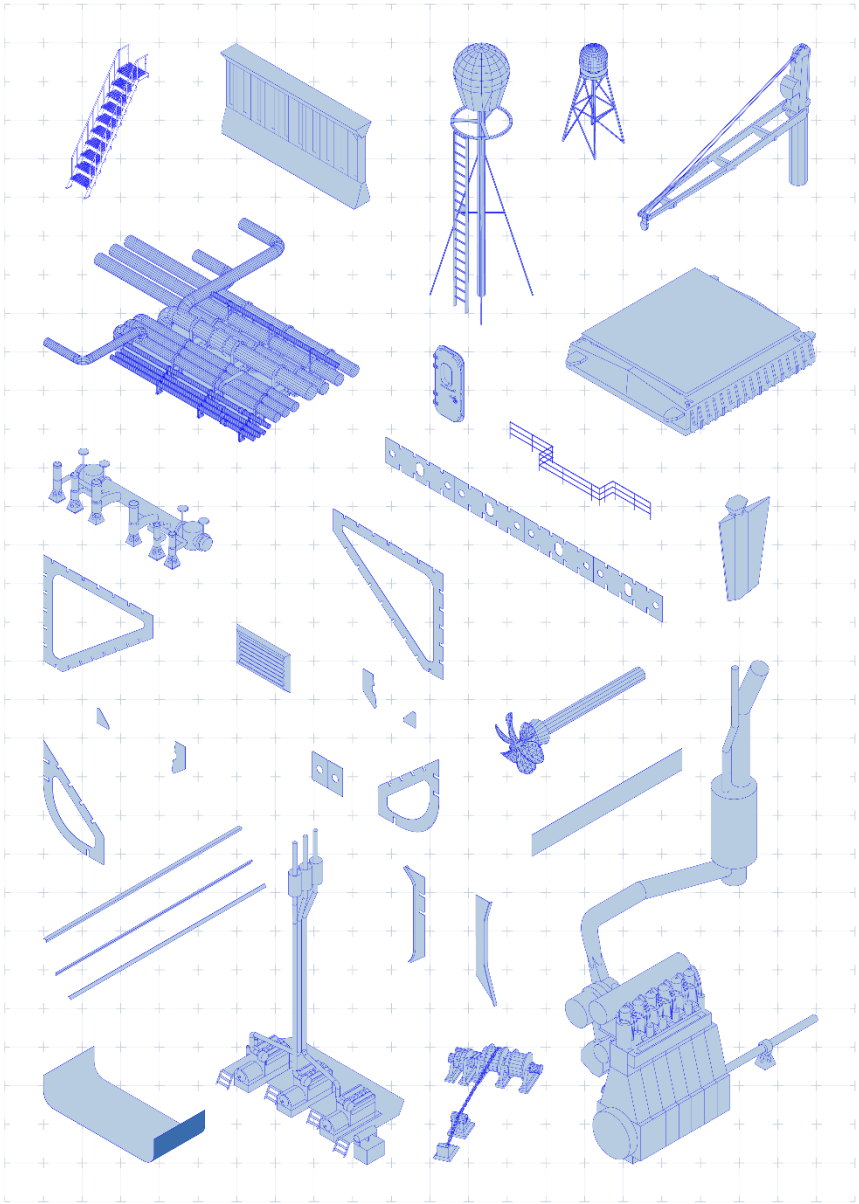

Figure 3. R-Strategies Circular Economy of Ship Parts: The intervention focuses on two main strategies, R7 Repurposing and R8 Recycle (upcycling and downcycling).

Aspect 3. How do you assess the value of your way of working (your approach, your used methods, used methodology)?

The Borders & Territories studio invites students to embrace a process-oriented methodology, which pays equal attention to theory and practice. In the beginning of the year, I emphasized in researching relevant topics and theoretical concepts however, at the same time the research findings were key tools in generating visual material like drawings, diagrams and maps that allowed for the explanation of information and data. I believe that mapping as a tool of fundamental understanding and critical investigation offers an appropriate and interesting base for a design intervention within spatial complexities, such as those posed by continually shifting power relations, territorial instabilities, and ecological disruptions. The spatially complex conditions of the shipyard were also analyzed from a variety of different lenses and scales which resulted in a more structured understanding of the industry and the context.

Particularly insightful during the process of developing my intervention was how the design considerations influenced and instigated a new area of interest to research and analyze as mentioned on Aspect 2. I found that the continuous communication of research and design, with one continuously influencing the other, was much more beneficial than following a linear approach towards my methodology, of researching and then designing.

Aspect 4. How do you assess the academic and societal value, scope and implication of your graduation project, including ethical aspects?

The studio focuses on locations where spatial situations have evolved and are teeming with provocative meanings and unexpected potential but have received little attention in contemporary architectural discourse. The graduation project is interested in the workmanship and resourcefulness of the city. It posits that the post-industrial city may be emblematic of the precarious position in which we find ourselves, environmentally and politically. Istanbul is a bustling city filled with industrial activity, especially in relation to maritime. The project focuses on the leftover spaces and structures that exist in the Shipbuilding region of Tuzla: architectural components which have been subject to - and still remain capable of accommodating - change and adaptation. The design will embrace constraints existing in the industrial location, incorporate not only existing but also new programs to the area and finally pose effects on macro and micro levels of the area. The leading goal is to achieve a mixed city – industry, living, commerce and transport to be accordingly coordinated within the same urban fabric. Furthermore, the project is addressing a new opportunity to source materials for the built environment. Using steel, plastic, wood and other elements from a ship that would have been discarded they are now part of a material library aimed to be used for various infrastructures of the project.

Going back to the beginning, the initiator of my research path and approach was heavily influenced by ethical considerations. Maritime is a booming industry that has a tremendous impact on climate, people and cities. The United Nations and the European Union have formed a variety of international conventions (United Nations Environmental Program also known as Basel Convention, IMO Hong Kong Convention, EU

Ship Recycling Regulation), codes, and guidelines that establish standards and best practices for ship repair facilities. Overall, ship repair facilities must follow a variety of safety, environmental, and labor requirements to deliver high-quality, safe, and sustainable services to the marine industry. The human and environmental costs of repairing and dealing with retired ships can be devastating and expose both aspects to a great number of risks. Exploited migrants suffer severe injuries (burns, toxic chemicals) and in other cases even lose their lives. The International Labour Organization has identified shipbuilding and the ship repair industry as one of the most dangerous environments to work. On the other front, toxic spills and other sorts of pollution harm coastal ecosystems and the communities that rely on them. The project investigates the industry and addresses vital issues in it to inform people and raise awareness of the current issues.

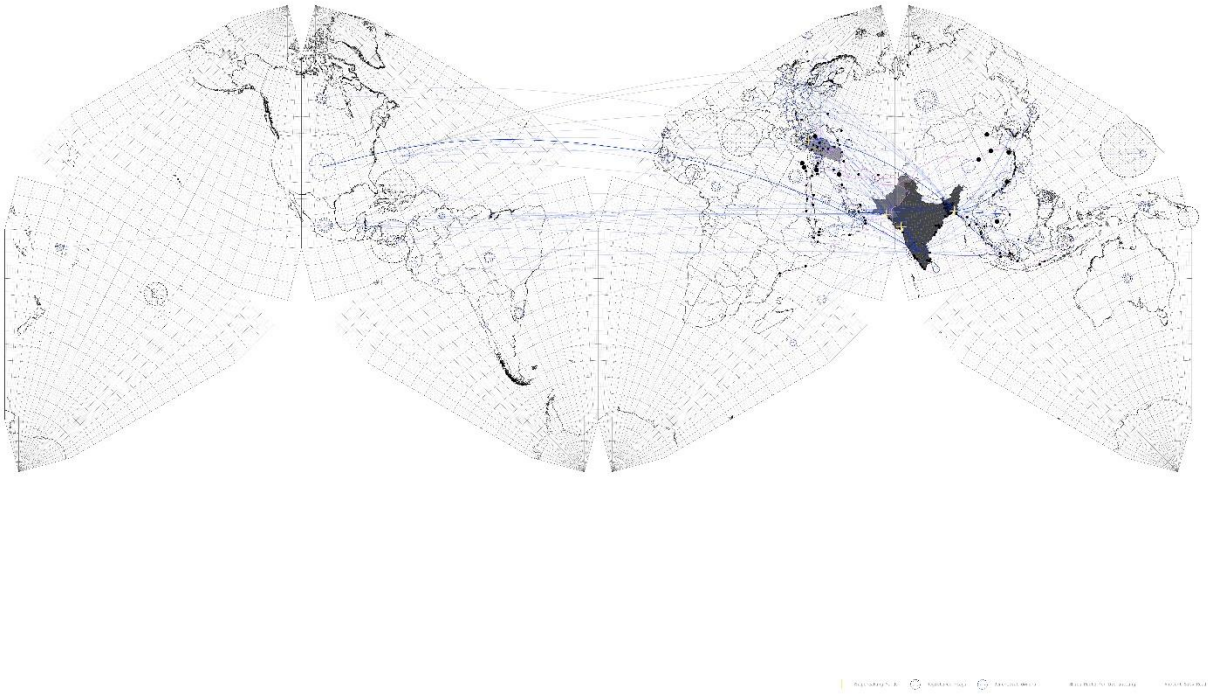

Figure 4. Maritime Ship Dismantling Practices: The majority of ships are being dismantled on beaches in South Asia. The above map portrays the origin of those ships and where they ended up and their change of flag patterns for the year of 2022.

Aspect 5. How do you assess the value of the transferability of your project results?

The Project operates in an active shipbuilding industry on the outskirts of the Instanbul Metropolitan area. The location of intervention is a busy industry that functions by complex operations. The project addresses the notion of bringing industries back to the city, making the connection of the two stronger since they rely heavily on each other. Intervening in such contexts, however, can be challenging and often unrealistic since it's vital that operations shall not be interrupted or interfered to in any way.

From a technical perspective, however, the project raises a vital problem regarding our approach towards circular economy. The shipyard essentially can act as a bank of materials and resources for the city and its infrastructure. Discarding that and continuing to export retired ships to countries in South Asia for disassembly has a tremendous impact towards the environment affecting co2 emissions of the industry and local ecosystems. A ship can be disassembled and portioned in shipyard, they can be repurposed to house different functions and programs and appropriately act as a built environment. Furthermore, vessels can be upcycled, recycled and downcycled appropriately for their materials to provide the city with the necessary resources for its infrastructure.

Reflection Questions:

- How to efficiently utilize residue space in an industrial area without affecting its operations and manage to integrate new programs into an existing industry?

- What sociopolitical elements have contributed to the shipyard's dynamic and hybrid spatial conditions (on land and on water), and how have these altered the area over time? How can they shift to allow the introduction of secondary programmatic use in the leftover spaces that exist in the area?