

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 P4 at the latest.

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

Personal information	
Name	Miltiadis Filippou Christodoulakos
Student number	5471397

Studio		
Name / Theme	Borders & Territories / Transient Liquidities along the New Silk Road II	
Main mentor	Filip Geerts	Architecture and the Built Environment, Theory & Territories
Second mentor	Gilbert Koskamp	Building Technology
Third mentor	Oscar R.G. Rommens	Architecture and the Built Environment, Theory & Territories
Argumentation of choice of the studio	<p>The studio focuses on locations where spatial situations have evolved, which are teeming with provocative meanings and unexpected potential but have received little attention in contemporary architectural discourse. Thus, it is the perfect opportunity to identify such conditions and analyze them through the studio's process-oriented methodology, which pays equal attention to theory and practice. In addition, 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.</p>	

Graduation project	
Title of the graduation project	Shipyards Spectacles: A theater for Marmara
Goal	
Location:	Tuzla Shipyards, Istanbul, Turkey
The posed problem,	The shipbuilding industry has been one of the most important ones in Turkey for decades and in the past years it has been experiencing rapid growth.

Shipyards are an architectural typology where the focus falls on both shipbuilding and shipbreaking as well as ship repairing. In Turkey all shipyards are privately owned with strong connections to the Government.

The first shipyards were established in 1390 during the Ottoman empire on the Golden Horn in Istanbul. Up until 1969 most shipyards were located in the Bosphorus and the Golden Horn (within the central area of Istanbul). In the 1970s a slow transition occurred, shifting the epicenter of the shipbuilding industry towards the east part of the city in a process of deindustrializing its center. The new site for the shipyard industry became Tuzla, a now state-owned land which was reclaimed during the shift of the industry. The reasons behind its selection are: (a) it is in the vicinity of the city and of the Bosphorus strait where ships anchor nearby to cross the strait and enter the Black Sea, (b) it comprises of a crescent shape that protects the yards and ships from tides, thus constituting the ideal topography for a shipyard. Upon reclaiming it, the Turkish Government then proceeded into leasing 37 plots to private companies for the creation of shipyards, thus forming the Tuzla Shipyard or otherwise known as Istanbul Shipyard.

While the industry was focused on building small to mid-sized commercial vessels, the sharp decline in orders since 2009 called for a change in the organization of Turkish shipyards. During the 2010 market change, the Turkish shipyards showed impressive flexibility by adapting to new market conditions, diversifying and shifting towards ship repair, ship maintenance and naval projects. This specialization allowed the industry to enter a new niche market which turned out to be

	<p>very rewarding. Since then, 13 new shipyards have been constructed, leading to a total of 82 operating shipyards. Currently, Tuzla has little to no space for expansion and new shipyards have been constructed in the areas of Izmit and Yalova (outside of Istanbul). Due to the rapid expansion of the city, industries located at the edges of the metropolis are at risk of being relocated again.</p> <p>Because of Istanbul's infrastructural connection and spatial organization, Tuzla's Shipbuilding region has been cut off from the rest of the city, preventing it from attaining its full potential as an instrument for activating the spatial integration between industry and the city. If this trend continues as expected, more shipyards are going to be constructed outside of Istanbul, leading to the dissociation of the city with one of its most historic industries.</p> <p>Currently, space in Tuzla Shipyard is efficiently used both on land and on water. The operations are highly organized across the whole site for the purpose of optimised flow of work, given the lack of space currently available in the shipyard. In this context, a phenomenon is being identified: This excessive organization of space and controlled flow of people, materials and tools leads to the creation of leftover spaces that exist in the fabric of the shipyard. Their size and location essentially render them useless for the operation of the shipyard and have thus become forgotten plots of land in the very busy shipbuilding industry.</p>
research questions and	I've developed a collection of research questions, each of which aims to uncover the emerging spatial linkages offered by Tuzla's shipyard to further my research. Specifically:

	<ul style="list-style-type: none"> • How to efficiently utilize residue space in an industrial area without affecting its operations? • How to create a spatial architecture experience in the Tuzla shipyard to attract outsiders to the industry, while still allowing for a harmonious co-existence between the current inhabitants and the newcomers. • 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 a secondary programmatic use in the leftover spaces that exist in the area?
<p>design assignment in which these result.</p>	<p>Integrating shipyards with the surrounding context and unveiling the strong relation between this historic industry and Istanbul. As mentioned in the problematization section, the industry shapes leftover spaces which are not currently used. The project will aim to utilize these spaces in the shipyards by creating a series of interventions without interfering with the industry's processes while trying to invite people outside of this context. The result will be a number of different structures, varying in uses and functions, referred to as magnets. The organization of the structures and their program will be carefully structured. Each point will have a carefully selected purpose, acting both as an individual mechanism but also as an integral part of the holistic experience of the route that is created from linking all the different points. The route will transition from land to water to carefully frame and portray all the different perspectives the shipyard can be viewed from.</p>

	<p>The purpose of those structures is going to address the technical aspect of the yards (architecture as a machine) where the ships become a source of materials that can be treated with different strategies to result to a variety of potential outcomes. Repurposing part of them while hosting new program or even fully disassembling them to create a material library for the construction of the new built fabric. The project will act as a demonstration of the endless possibilities of reusing and recycling parts and materials from retired ships.</p> <p>The programmatic use of the interventions will aim to frame the shipyard, so that the visitor can understand the complex operations of the industry. Multiple viewing points are integrated to allow this to happen but also resting areas and temporary housing accommodations allow the visitor to slowly approach the complex spatial conditions that are present on site.</p> <ol style="list-style-type: none"> 1. Reception and changing rooms 2. Temporary Houses 3. Resting Space / Cafe 4. Observatory
<p>[This should be formulated in such a way that the graduation project can answer these questions. The definition of the problem has to be significant to a clearly defined area of research and design.]</p>	
<p>Process</p>	
<p>Method description</p> <p>As a starting point for the graduation project, a collaborative framework based on Istanbul's vast infrastructure system was used to create a collective spatial condition map of the proposed Istanbul canal. 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.</p>	

Moving on to the individual part of the graduation project, I proceeded adding a theoretical background framework 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 drawing techniques that can represent superimposed palimpsest environments such as 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 problems as well as potential opportunities 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 and restricted area, I managed to conduct a holistic site analysis, documenting the movement of people, trucks and ships. Moreover, I got the opportunity to interview Ms. Asli Odman, a researcher based in Istanbul, who conducted a survey at shipyard-level of 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 with 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.

The above-mentioned sources and public governmental documents were used to better understand and analyze the operations and spatial conditions of the Tuzla region.

Finally, the construction method implemented for the project is heavily guided by the concept of the circular economy. A shipyard is a very busy and complicated site both in terms of flows and operations. 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 and R6 Remanufacture. However, there is a big opportunity to further introduce R7 Repurpose and R8 Recycle. The project thus emphasizes on creating new possibilities to treat the available resources so as to create new functions for the discarded product or its parts and even process this materials to obtain lower or higher grade value out of them.

Literature and general practical preference

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- OECD Council Working Party on Shipbuilding (WP6) (2011) "The Shipbuilding Industry in Turkey." Available at: <https://www.oecd.org/industry/ind/48641944.pdf> (Accessed: January 8, 2023).

Reflection

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,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.

2. What is the relevance of your graduation work in the larger social, professional and scientific framework.

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 remain capable of accommodating – change and adaptation. The design will embrace constraints existing in the industrial location, instigate not only existing but also new programs to the area and finally introduce 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. Lastly as mentioned before the project is addressing a new opportunity to source materials for the built environment. Guided by the circular economy, re-introducing steel, plastic, wood and other elements from a dismantled ship that would have otherwise been discarded, they are now part of a material library aimed to be used for various infrastructures of the project.