

# Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



## Graduation Plan

Submit your Graduation Plan to the Board of Examiners ([Examencommissie-BK@tudelft.nl](mailto: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:

<b>Personal information</b>	
Name	Luca Parlange
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<b>Studio</b>		
Name / Theme	Transitional Territories	
Main mentor	Taneha Kuzniecowa Bacchin	Design
Second mentor	Sjap Holst	Building Technology
Argumentation of choice of the studio	<p>The reasons behind the choice of the studio are various.</p> <p>First of all, the Transitional Territories studio is a cross-disciplinary chair which - because of its hybrid nature between architecture and urbanism - strongly pursues a multi-scalar approach gradually zooming-in from the macroscale of the North Sea (main geographical area of interest) to the 1-to-5 scale of the architectural detail. This comprehensive approach is for me a clear example of a modern method of approaching the design process and its contemporary issues. However, the studio does not envision design as "problem solving" but as media to anticipate, understand and unfold different architectural scenarios. Transitional Territories is in fact following a 'research by design' strategy, where the outcome of the project is not based upon a final product per se, but on the knowledge that can be drawn from the process of design. This means that despite the area and set of problems are pre-assigned, each student is free to develop his/her very personal vision within the general theoretical and geographical framework.</p> <p>Secondly, the Transitional Territories studio gives particular attention to some crucial aspects of our present time (Anthropocene): the temporal dimension of certain phenomena like the transformations of land, riverine and maritime landscapes and their reflection in architecture and society; but also the theme of sustainability tackled from a much broader</p>	

	<p>perspective starting from the social, economic and historical standpoint.</p> <p>Last but not least, throughout the whole design process, great attention is given to the means and media of representation of the project as they are considered decisive in stimulating and guaranteeing the consistency and clarity of the project.</p>
<b>Graduation project</b>	
Title of the graduation project	Future Relics. About Doel's 'de-polderisation' and destruction in the Post-Anthropocene era.
<b>Goal</b>	
Location:	Doel, Beveren, Oost-Vlaanderen, Belgium
The posed problem,	<p>Within the main framework of the North Sea environment, some typical problems of the Anthropocene era emerged as the most urgent to be addressed because water-related territories, like the ones object of study, are more and more becoming the setting of radical fast-paced phenomena such as environmental changes, resources depletion, pollution, political-economic instability, and social disparities.</p> <p>The town of Doel, last of the Belgian polder villages on the left bank of the Scheldt near the North Sea, is emblematic of the ongoing conflictual relationship between human settlements, environmental crisis, and man-made infrastructures: the site is situated between the drowned land of Saeftinghe, a swampy tidal area constituting natural reserve, the nuclear power plant of Doel and the Port of Antwerp.</p> <p>Saeftinghe was in medieval times a flourishing area of polders and villages of great strategical importance for controlling and accessing the harbor of Antwerp. During the 14th and 16th centuries, heavy storm floods devoured large areas of this land making it what today is the largest intertidal area in Europe. On the other hand, the power plant, built in 1969, holds the record in Europe as the closest nuclear facility to a densely populated urban area. The plant was expected to end its lifecycle in 2015, but the shutdown of the reactors was recently postponed to 2025 thus just delaying by 10 years the problem of its replacement with renewable sources of energy.</p> <p>Concerning the Port of Antwerp: after having vastly expanded towards north over the last five decades while engulfing the natural habitat of the Scheldt estuary and the former polder-land near the national border, the second biggest port in Europe is now threatening the survival of Doel. The private company Lso acquired the whole area and started the process of forced leave for its inhabitants as the town was the appointed venue of the next port expansion. As planned in 1975, this further development provided the demolition of the whole settlement and the excavation of a massive new dock ("Saeftinghe dock") instead. As a consequence of this political-economic and infrastructural pressure, the village was abruptly</p>

	<p>abandoned and turned into a ghost town with only 25 inhabitants left of the 1500 living here during the '70s.</p> <p>The association Doel 2020 (founded in 1998) has always been legally fighting to avoid the bulldozing of the town and promoting initiatives and projects for its revitalization. In 2019, after years of trials and lawsuits, the government proclaimed the cancellation of the expansion project of the port, guaranteeing the survival of the town, but what is left today is a post-apocalyptic hamlet squeezed between the dikes, the cranes and the chimneys, mostly used by graffitists as an en-plein-air museum.</p> <p>After being reclaimed from the river in the 17th century as an island surrounded by seawalls and purposefully flooded land and then transformed into a polder, what is the future now for this very complicated and dynamic estuarine area of the Scheldt?</p>
<p>research questions and</p>	<p>As requested by the Transitional Territories chair, the research questions should be formulated on two different scales:</p> <p><b>Territorial Level:</b></p> <p>"In a fleeting and unstable environment such as Antwerp and the Scheldt Estuary (North Sea), can the architecture/landscape project, envisage new spatial configurations for the metabolism of natural, industrial and socio-economical processes (mineralogical and biological)?".</p> <p>"Can the design understand and exploit these processes for projecting a long-term architectural vision which anticipates or even accommodates future scenarios for the area?".</p> <p>Why and how did the port of Antwerp develop? What are the socio-economic and infrastructural consequences of its expansion? How will it evolve in a future more and more characterized by 'anthropocenic' phenomena such as flooding, water-level rise and climate change?</p> <p>Can an abandoned and then repurposed infrastructure be the milestone for the rebirth of an area and its society, not just symbolically but also effectively? How can this rebirth be based on changed preconditions which are avoiding the old man-made infrastructural solutions like dikes' construction and nuclear plants in favor of nature-based visions for both water-management and energy plan?</p> <p>Is it possible to picture a wider integrated ecosystem to reconnect and regenerate very different and idiosyncratic environments such as Saeftinghe natural reserve, Doel and the Port of Antwerp? How can this vision anticipate a new logistic and less toxic landscape through the revitalization of the natural environment?</p> <p>In an era of fast-paced changes such as the Anthropocene, how far dystopian and utopian scenarios really are from our reality?</p>

	<p><b>Architectural Level:</b></p> <p>“Death is not just a diagnosis of Anthropocene, it is simply a condition (Bratton, 2013): hence, within the context of contemporary environmental collapse, (how) can architecture and architects deal with the possibility of death and extinction of living beings”.</p> <p>“Which kind of architecture can we imagine for a post-apocalyptic scenario? Can we actually imagine and design an architecture’s degradation process?”</p> <p>“Can architecture, despite being a reflection of the Anthropocene era, provide new self-healing and survival scenarios for the Post-Anthropocene?”. (How) can architecture hint at climate change mitigation and nature metabolism?”.</p> <p>“(How) can architecture embody, represent and address the everlasting dichotomy between natural and anthropized processes?”.</p>
<p>design assignment in which these result.</p>	<p>Following the approach of the studio, the project will unfold on three different scales.</p> <p>On the macroscale (regional, territorial): starting from the anthropogenic issues emerged from the North Sea research, the project will first try to contextualize them in the Flanders region attempting to envision a different role for Antwerp and its port within Belgium. This will happen by taking into consideration the links between the city and the macro-system of north European cities like Bruges, Ghent, Rotterdam, and Amsterdam. In this context, the project area is designed to be the gateway to Antwerp but also part of a green “belt” along the coast of Belgium, working as a buffer zone for the mitigation of flooding and sea-level rise. The “de-polderisation” project of the Doelpolder, inspired by some academic work on the same topic, will be then applied to this case for its nature-based approach in the remediation of the environment and for its pertinence to the plan of protection and safe-guarding of the natural reserve of Saeftinghe.</p> <p>The energy plan of the whole country comes to attention when programming an intervention in the Doel area: the nuclear power plant of Doel is in fact one of the two Belgian operating plants, which together provide 51.3% of the country's electricity. As Belgium decided to phase out nuclear power generation completely by 2025, the problem of energy transition occurred, because wind-power cannot totally supersede that production despite its ever-growing spread. Existing energy plans for the area suggested for example the implementation of a tidal power station inside the dikes and the addition of wind turbines at the mouth of the river in the North Sea.</p> <p>On the mesoscale (urban), the project will mostly focus on designing an alternative solution for the area going from the Deurganckdijk dike (south) to the Doel nuclear power plant (north), an area which also includes the ghost-town of Doel and a portion of the polder. At this scale,</p>

	<p>the process will face various kind of challenges: primarily, the problems related to the connection with the river, like the water level rise and the flooding, and the ones related to the pollution due to the proximity of the port and the nuclear power station. As provided by the design, the territory will be able to cope with the environmental agenda by letting the river in through a breach in the dike and turning into a controlled (swampy) tidal zone which can accommodate the overflow of the Scheldt but also naturally depurate its waters.</p> <p>Secondly, the heritage of the village has to be preserved in accordance with the major territorial intervention and the settlement protected at all costs so to continue the stubborn resistance to extinction of its inhabitants, against both infrastructural developments and climate change. This can be done by transforming the hamlet into a memorial, a 'relic city'.</p> <p>On the architectural scale, the design will revolve around the implementation of two main functions both related to the concept of preservation as opposed to extinction: a knowledge ark with a seed vault and frozen zoo and their related laboratories, and a museum of extinction. While the last is an exhibition of embalmed or ambered objects, the first two are biorepositories which preserve genetic material in very-rigidly temperature-controlled spaces. The advantage of placing these particular functions near Antwerp is the centrality of its Port worldwide and the already existing very high-quality cold chain. The significance and importance of such functions in this particular venue lays in its territorial contradictions and in the history of each different settlement which appear to be all permeated by the theme of extinction.</p> <p>The architectural project aims here to be effective as remediation to the polluted and toxic environment of the Port and as a mediation between the urban context and the protected natural reserve habitat. In a metaphorical way the knowledge ark can be seen as the reflection and embodiment of Noah's Ark as it is both a space for the preservation of species and an architectural object designed to survive time.</p>
<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><b>Process</b></p>	
<p><b>Method description</b></p>	
<p><b>Research</b></p> <p>The personal research I have carried out as a starting point of the project is indeed a corollary of the collective work conducted by the whole studio on the North Sea.</p>	

The background knowledge provided by the collective research was, in fact, decisive in stimulating my fascination and in delineating both the area of interest where my project can be placed and my research questions.

The design process will be held following the same "multi-scalar" approach of the research, from the macroscale to the microscale. The process of mapping applied to the North Sea is continued in the "macro-scale" of my thesis, with a great caution on not treating the existing – in this case the Scheldt estuary - just as the physical manifestation of the territory (topography, water, roads, buildings, vegetation), but trying to reveal in the form of layers the hidden (networks of) forces which underlie the structure of a geographical area.

The catalog of the species of Saeftinghe was another helpful mean in the understanding of the territory, specifically of the flora and fauna of the natural reserve, which is today endangered by means of pollution, anthropization and climate change. Diagrams and schemes were instead used to grasp and show the magnitude of anthropic phenomena such as (air, noise, water) pollution related to port operations and industries and their impact on the environment. On the meso/micro-scale, the site visit and the photo reportage of Doel gave an even more complete perspective on the area verifying the guesses made on the bigger scale, while the reading of news articles contributed to the research by adding an updated social and political insight. From the intersections between the socio-environmental emergencies and the status quo, I have drawn the possible scenarios of interventions, always keeping the Anthropocene as a general framework for defining the conceptual and spatio-temporal coordinates of the project.

## **Design**

As already anticipated, the design will be carried out through three different scales.

On the macroscale, the project consists of a regional "strategic and energetic plan", showed in a diagrammatic way. The design recognizes, in fact, Antwerp as part of a bigger ensemble of important economic centers of the North Sea zone like Bruges, Ghent, Rotterdam, and Amsterdam. In this context, the project area is important as an "access" to Antwerp and as part of a Flemish coastal green "belt" for the mitigation of flooding and sea-level rise. The project will also take a position regarding the re-purpose of the nuclear power station, which will become a prominent issue starting from 2025.

On the mesoscale, the project will mostly focus on designing a masterplan foreseeing the depolderization of the Doelpolder, its transformation into a controlled tidal area and the development of a new architectural scheme for the part included between the ghost-town of Doel (south) and the Doel nuclear power plant (north).

Finally, on the architectural scale, the knowledge ark with its related laboratories are spaces for the preservation of species and therefore architectural objects designed to survive time and resist or accommodate transformations.

## **Literature and general practical preference**

### **Literature:**

## Books

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## Essays

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- Bill Wasik, "What the Car Did — and What it Might Do." *The New York Times, Tech and Design Issue*, November 7, 2017.
- Benjamin H. Bratton, "Some Trace Effects of the Post-Anthropocene: On Accelerationist Geopolitical Aesthetics", *E-flux Architecture*, 2013.
- Carlo Pisano, "Patchwork Metropolis", 2018.
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- Christian Schwagerl, "How We Must Adjust Our Lifestyles to Nature: Welcome to the 'Anthropocene', the Human Epoch." *Independent*, February 24, 2015.
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### **General Practical Preference**

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