

# The North Sea territory as a project

## Determining a multi-scalar and temporal approach to research

### I INTRODUCTION

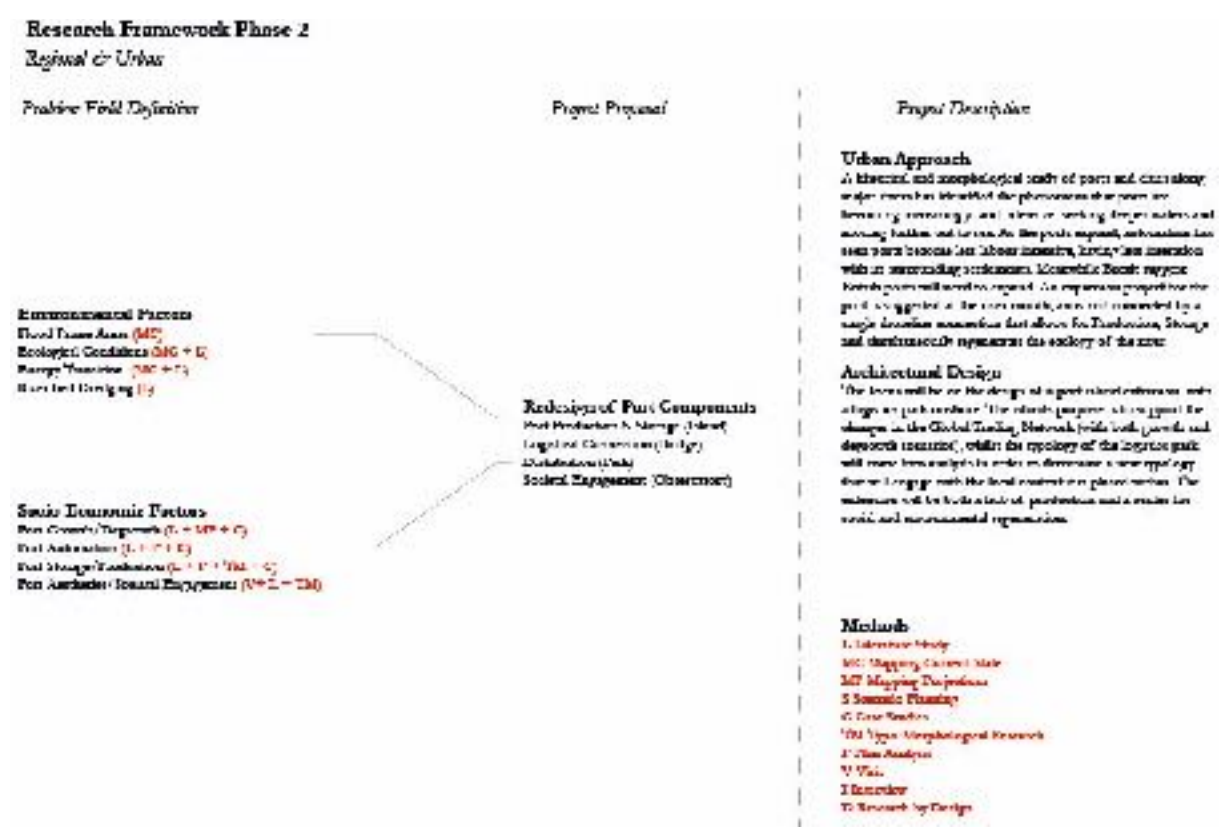
Architecture is a broad activity, that can be both engineering based as well as humanities based. The body of knowledge within architecture, like in most fields of study, is ever-developing, being constantly updated by developments in technology, social sciences and constantly affected by the context or time-period within which it is produced. The architectural discourse has shifted from a prescriptive practice, initiating with Vitruvius<sup>1</sup> and a systematic body of knowledge combined with a set of rules that ground architectural production, to a descriptive practice in which knowledge is produced. Recent critical theory has become aware of the socio-economic shifts relating to industrialisation, globalisation and capitalism and the spaces they produce<sup>2</sup>, exponentially growing the field within which the architect can operate<sup>3</sup>. This growing of tasks has resulted in the abandonment of the original set of instructions defined in the history of architectural theory, which was unable to encompass the new range of architectural projects. As the role of the architect was diversified to allow for adjustments driven by a market-driven logic, theory could not keep up with an architect's production before hand. As a result, research, in particular research by design has become an alternative to theory in providing another method of architectural knowledge production<sup>4</sup>.

This course has opened my eyes to the endless range of methods used for research and design in the many talks, and the underlying conclusion I can draw is that each method has a specific purpose, there is no hierarchy to the choosing of methods<sup>5</sup>, instead these methods coexist being utilised in relation to the specific contexts and paradigms(viewpoint) the architect chooses to work within. Because architecture borders many disciplines, the architect requires knowledge of various phenomena, from the physical properties of materials to principles of visual perception<sup>6</sup>. Conducting research can therefore be challenging, as a research requires a systematic inquiry into the way the knowledge is created, which in turn requires extracting certain information, categorising and analysing it before presenting it<sup>7</sup>. What interested me the most in this course would be the territorial approach to research which coincides with my design studio who looks at the territory as a project. The research finds a common ground in the understanding that the territorial and urban contexts are the primary forces that determine architectural production and that the underlying philosophical, cultural, political and aesthetic value systems both influence and determine the significance of architectural production.

This paper looks at the role of research by design as an approach to a graduation topic within the theme of the territory as a project. The transitional territories studio, under the chair of public building is an inter-disciplinary studio with designers, urban planners and water managers/engineers. This graduation project has its inception in a theoretical framework based on the notion of space as a territory put forth by Claude Raffestin in which he argues that space is not a given construct but socially appropriated and "territorialised" by humans as the object of social practice and knowledge<sup>8</sup>. He argues that territorial space has a certain territoriality (behaviour), consisting of relations between social groups on different social, spatial and temporal scales. The nature of the territory as a temporal and multi-scalar space requires a multi-methodological approach to research. My thesis research will look at the implementation of different methodologies at certain scales of the design project, with an emphasis on scenario based design and mapping as a means to connect the scales to the temporal quality of the research.

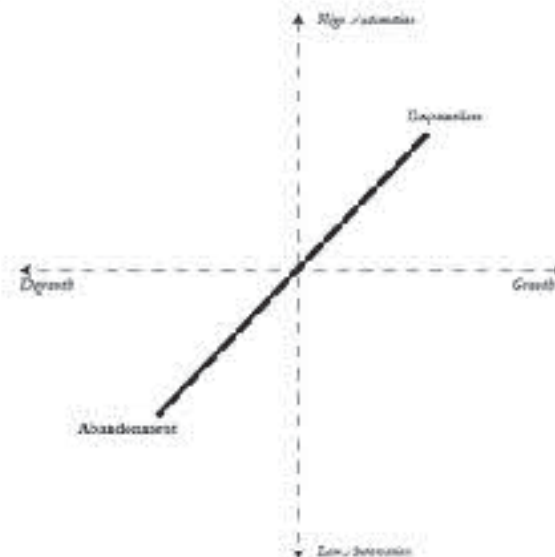


At the regional and urban scale Typo-morphological research is used as it addresses the physical structure of buildings, blocks, cities and territory on different scales. It helps in understanding the historical transformations of types of architecture. This was essential in determining my hypothesis, which suggests that ports are constantly seeking deeper water and expanding further from the city. This allowed me to abstract the physical manifestation of port structures in order to suggest a new one based on projections. The main tool at this stage was analytical drawing and historical case studies of port expansions.



At the architectural scale, the step still to be carried out, I will focus mainly on Typology as a method that interprets basic building configurations from both historical and contemporary paradigms. This research investigates the typological features of buildings and their qualities. By Understanding the historical transformation of certain architectural typologies, in this case ports , I am able to gain insight on how to manipulate, reuse, recombine and transform these typologies. The aim at this stage is to redesign certain elements of the port focusing on the ways in which to combine distribution with societal engagement in an architectural type. Plan analysis of the port components will further aid this phase of the process.

## Temporal Scenarios



The overarching method of testing my project at multiple scales and temporal realities is the scenario based approach introduced at the territorial scale. I aim to show the evolution of my project through the lens of two scenarios, one of increasing automation and growth, and the other of low automation and degrowth. The purpose of this is to show the physical, environmental and societal effect of these major economical changes on the spacial attributes of the project. How will the project manifest and react in an automated hub scenario, and what will be left behind in the case of the port becoming obsolete or abandoned as the focus of the market shifts elsewhere?

Because of the multi-modal approach to this project the literature review will be an extensive one. In the first phase literature searches were made using websites, academic databases, books and articles. For the purpose of this short paper I will describe the literature used in mapping the climate and economic shift projection scenarios in the first stage. The main sources included:

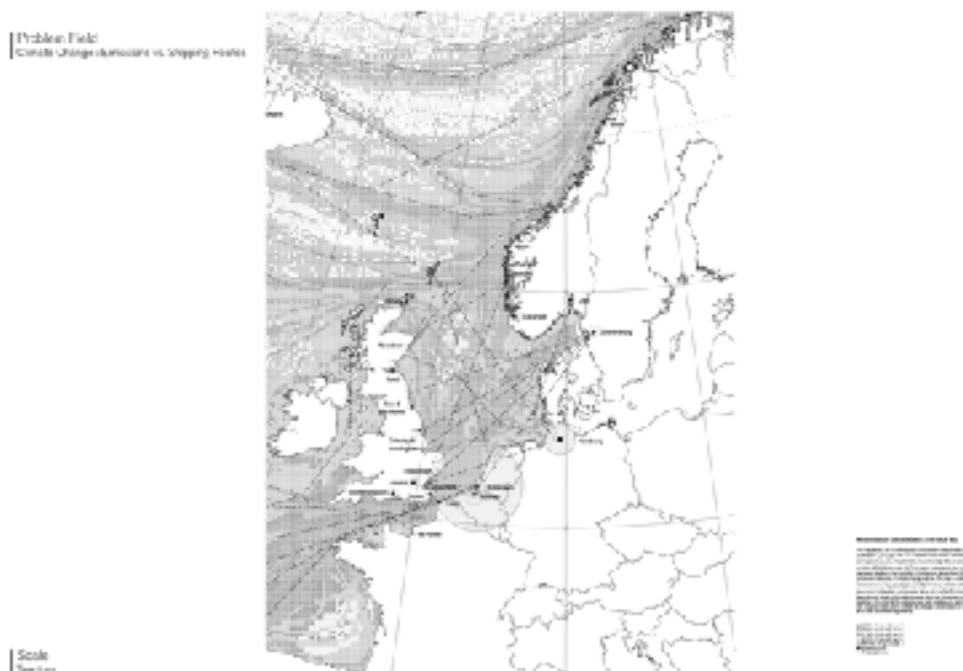
- IPCC climate change reports: The International Panel on Climate Change has conducted extensive research into the main prediction with regards to sea level rise, emissions and its effect of the environment<sup>10</sup>.
- Individual Governmental Reports on port statistics: As an example, the 2016 publication of of the UK port freight statistics on all British ports and the projected expansions<sup>11</sup>.
- GIS data from multiple public databases
- Several News articles and reports on the impact of Brexit on UK ports.

The use of GIS is extremely relevant within mapping societal and environmental patterns. It also allows for greater accuracy when mapping the results. Carlo Ratti, amongst other architects and urban planners have shown the relevance and possibilities of using GPS mapping in urban planning and design<sup>12</sup>. Dirk Sijmons has used GIS amongst other methods in his projections of the shifts in the energy network seen in his film 2050: Energetic Odyssey<sup>13</sup>. The drawback of GIS for example is that there remains a certain level of abstraction within the data, which is appropriate for research at the territorial scale, but less appropriate when looking at social interactions at an architectural, or human scale.

### III RESEARCH-METHODOLOGICAL REFLECTION

For the purpose of reflection, I will look at the first stage of my research looking at what I have done and comparing it to the use of mapping and scenario Building by others. These two methods were selected for discussion as the combination of the two was essential in the definition of my problem field.

Mapping is used in the research-by-design methodology as a mode of linking spatial analysis and narratives to architectural design. However there is still an ongoing debate on whether mapping is purely a way of visualising and representing spaces or if it in itself is a way of creating order. The distinction lies in the definition of mapping, mapping as the act of creating a map, and mapping as an operation that associates elements. Various Scholars and Researchers have differing opinions on mapping. Cosgrove, for instance, who has looked at the importance and use of mapping across various fields, considered acts of mapping merely as acts of visualising and recording data, creating spaces graphically<sup>14</sup>. James Corner, who has been at the starting point of my studios research believes in the agency of mapping, as “order is the outcome of ordering”<sup>15</sup>. Within the architectural discourse current and past trends in mapping techniques suggest its ability to register architectural form and/or the interpret urban spatial processes<sup>16</sup>. As an example, Kevin Lynch and his subjective approach to mapping utilises mental maps in order to determine how various people perceive their urban environment and its key elements<sup>17</sup>. On a larger territorial scale, Carlo Ratti, who used GPS phone tracking in order to map the flow of people through a city allows for an insight into the inner workings of a cities transport network. In the latter case mapping is relevant to my own research, as the map becomes a tangible place, a territory that is measured, based on social interactions. An example bellow shows one of the many maps made by me during stage 1, in which emissions projections are overlaid on port expansion and shipping route projections. This was used to show how the socio-economic processes are indeed linked, and changes in one have a chain reaction on the other. This map, together with many others was compiled into an Atlas, which became the documentation of the end of research stage one. The outcome was a reading, or a territorial narrative that pinpointed the Port network as one of the main problem fields to investigate further.



Scenario building was the other key component during stage one of the research by design process. The studio took mapping a step further in order to visualise the possible physical impacts of the project scenarios we had been working within. Due to the initial assumption of space as a social construct, we looked at the effect on the coastline of the North Sea depending on social or environmental trends. Below you see the result, from right to left we see a future where high level of co-operation between nations in the north sea and a high level of ecological policy result in a sustainable growth scenario, allowing for the extraction of resources and production to be carried out in harmony with natural processes. The last case is an example of no co-operation, where Brexit and other nationalistic tendencies have once again militarised the coastline, and where extraction remains as unbalanced as it is today.

Figures 10  
Transition in Landscape Coastlines



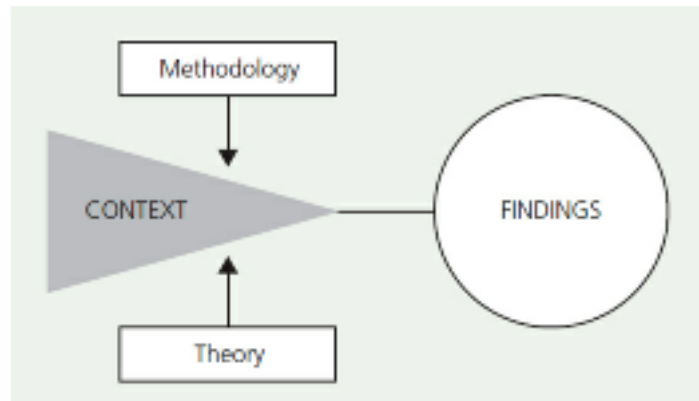
3. Lab  
Turkey

The scenario based approach is taken mainly from the field of designers of information systems, and software engineering. One can argue that like in architecture, whilst designers of information systems have an opportunity to make a difference, the reality of the problem is not always a given. The appropriate solution must also be executed in order to prove validity, especially when it comes to the improvement of social inequalities. In the scenario based approach there are two main traditions, one of control, in which the fluidity and complexity of the design is filtered in order to extract problems to be solved, and the complementary which seeks to exploit these characteristics to gain insight into the structure and dynamics of the problem field by seeing the context in different ways and allowing for interaction in between its physical elements<sup>18</sup>. Scenarios have key features which include setting, agents and lastly their own objectives. The objectives of the agents may alter the goal of the scenario, as is the case with my own research above. The benefits of scenarios are that they evoke reflection on your design outcome, elements of the design appear in a scenario embedded in user interactions that depict their meaning to the user or agent, supporting the idea of design as a reflective practice<sup>19</sup>. A combination between the two methods has proven to already be extremely fruitful in tackling the fluidity of the territorial project.

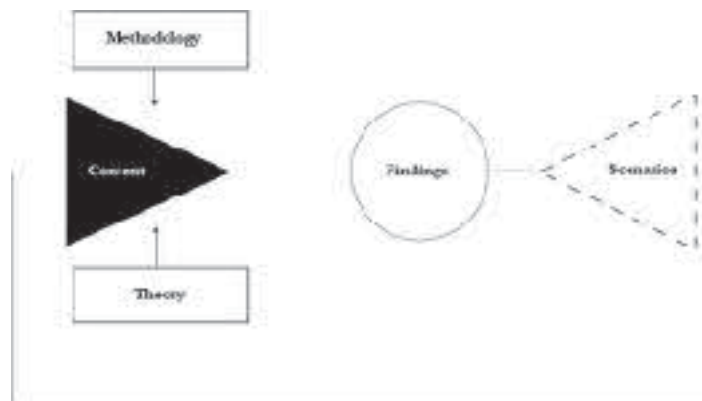


#### IV POSITIONING

The overall research project is heavily context-driven taking one of the models of architectural research proposed by Lucas as an example<sup>20</sup>, with a theoretical base that helps determine the negative heuristics of the project and subsequently the problem field. As Landau suggested the negative heuristics(guidelines) helps the designer position himself with respect to the context he is studying<sup>21</sup>. The initial look at space as a territory in the works of Raffestin<sup>22</sup>, Lefebvre and Harvey<sup>23</sup> combined with the notion of territoriality and the networks it contains looked at by Latour<sup>24</sup> and Graham<sup>25</sup> has been a theoretical base in which to position my own research. The texts suggest that the rise of globalisation and networked infrastructure is in essence splintering the urban fabric, creating social segregation and inequalities in the process. Attempting to mitigate the impact of global networks on the local is my initial starting point.



What my research already suggests is that socio-economic shifts (such as Brexit and new Trading routes) in an era of globalisation and hyper mobility can have catastrophic results on the British port context. Expansion must be strategic, to avoid de creation of a string of low quality logistical architectural artefacts devoid of any aesthetical and societal purpose<sup>26</sup>. It is no longer enough for a project to design a solution to current problems, it must also question the role it will play if the context were to change. I propose an extension to the model shown above to the one shown below in which I make use of the findings to create alternate scenarios that are then projected onto the context to portray the evolution of the project on temporal scales.



My position lies in looking at the space as a territory, constructed through social interactions and networks. I believe the design project must anticipate the global social and economic shifts that are present within the territory of the North Sea and must be adaptable in order to mitigate the effects of these changes on local societal level. Mapping is used as a tool of associating, ordering and projecting the changes in the qualities (territorialities) of the space rather than a mere visualisation tool. Equally important, The scripting of scenarios based on literature and statistical data allows for the depiction of the alternate realities that the societal shifts could produce. The designing of the project based on various contextual scenarios allows for the inscription of a certain level of adaptability is the “skeletal” essence of the project itself, showing how it can be built upon, and showing what its use will be once its striped down to its casco state<sup>27</sup>.

I was greatly inspired by the talks on territoriality, and the layered approach of drawing the subsurface introduced by Fransje Hooijmeier. Her position in combining current urban theory with a research by design approach is something my current project also attempts to achieve. Her use of scenarios in testing future proof solutions is another aspect I adopt. Furthermore the stress she puts on interdisciplinary design is something I am in agreement with. It is important to work within multiple design languages and produce results that can be added onto by multiple disciplines. In a world with multiple complexities that are present within the same space (territory), being able to communicate these complexities and discuss with the disciplines active within them is of extreme importance.

Looking back at the initial question of determining a multi-scalar and temporal approach to territorial design I can formulate my own position as striving to test my design at each scale against the scenarios that are relevant to the context I will be researching: Port infrastructure. The literature will aid me in determining my problem field, as mapping and scenario writing will be present at all stages depicting the temporal aspect of the project. The typological and morphological research that will be implemented in the continuation of the research by design process will serve as a method of depicting the changes in scenarios on the physical elements of the territory. I am however aware that by using a multi-method approach to research it is important to document this process extensively in order to evaluate the end stage of the process, making sure that the initial concerns have been answered.



## end notes.<sup>1</sup>

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- 2 Henri Lefebvre, *The production of space (translation by Donald Nicholson Smith)* (Oxford: Blackwell Publishing, 1991), 26.
- 3 Ray Lucas, *Research Methods for Architecture* (London: Lawrence King Publishing Ltd, 2016), 7.
- 4 Mark Schoonderbeek, *Mapping and experimentation in architectural design in Prototypes and Paradigms* ( Delft: TU Delft, 2016), 82.
- 5 Linda Groat & David Wang, *Architectural Research Methods* ( New Jersey: John Wiley & Sons, Inc., 2013), 66.
- 6 Linda Groat & David Wang, *Architectural Research Methods* ( New Jersey: John Wiley & Sons, Inc., 2013), 20.
- 7 Linda Groat & David Wang, *Architectural Research Methods* ( New Jersey: John Wiley & Sons, Inc., 2013), 76.
- 8 Claude Raffestin, *Space, Territory and Territoriality* (Geneve: University of Geneva, 2012)
- 9 Fransje Hooijmeijer, *Drawing the subsurface: An integrative design approach* (Delft: TU Delft, 2017)
- 10 IPCC, *Global warming of 1.5 degrees a summary for policy makers* (Switzerland: IPCC, 2018)
- 11 Department for Transport, *UK port freight statistics: 2016* (London, 2017)
- 12 Carlo Ratti, *Mobile landscapes: using location data from cell phones for urban analysis* (2006)
- 13 Maarten Hajer & Peter Pelzer, *2050—An Energetic Odyssey: Understanding 'Techniques of Futuring' in the transition towards renewable energy* (Utrecht: Utrecht University, 2018)
- 14 Denis Cosgrove, *Introduction: Mapping Meaning in: Denis Cosgrove (ed.), Mappings* (London: Reaktion Books, 1999), p.1.
- 15 James Corner, *The Agency of Mapping: Speculation, Critique and Invention*, in: Cosgrove, *Mappings*, (London: Reaktion Books, 1999), p. 229
- 17 Marc Schoonderbeek, *Prototypes and Paradigms* ( Delft: TU Delft, 2016), 82.
- 18 John Carroll, *Five reasons for scenario based design* (Virginia: Virginia Tech, 1999)
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- 20 Ray Lucas, *Research Methods for Architecture* (London: Laurence King Publishing, 2016) 12.
- 21 Royston Landau, *Notes on the concept of an architectural position* (London: AA, 2015) 113.
- 22 Francisco Klauser, *Thinking through territoriality: Introducing Claude Raffestin* (Neuchatel: University of Neuchatel, 2011)
- 23 David Harvey, *Rebel Cities* (London: Verso, 2012)
- 24 Bruno Latour, *Making things public* (Cambridge: MIT, 2005)
- 25 Stephen Graham, *Splintering Urbanism* (London: Routledge, 2001)
- 26 Pier Vittorio Aurelli.
- 27 Dirk Sijmons, *Het casco concept: een benaderingswijze voor de landschapsplanning* (NBLF, 1991)