

LANDSCAPE IMAGINATION: ECOLOGY AS INDUSTRY

Envisioning transition of the Port of Rotterdam into a Productive landscape Park

Reflection P4

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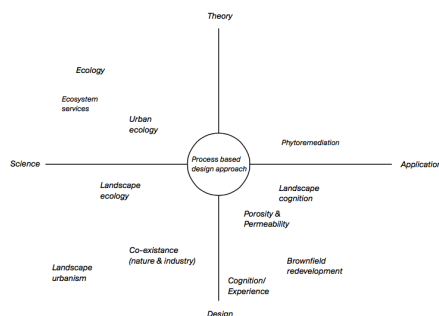
Introduction

The project 'Landscape Imagination: Ecology as Industry' is envisioning the transition and the future for Port of Rotterdam from a nature-based perspective. The port of Rotterdam is a 40 km long terminal located at the confluence of two mega-systems, the Holland's North Sea zone and the Rhine Maas Delta. From the fishing markets in the 15th century, to the petro-chemical industries in the 20th century, this port is one of the most important junctions for the trade of goods in the world. Due to the nature and size of activities that take place in the port of Rotterdam and the hinterland, it unmistakably impacts the environment. (Boer & Verbraak, 2010) In the graduation project I'm building a 'research by design' project for a framework that could guide the transition of port of Rotterdam into a productive landscape park. Hereby, the nature and ecology become industry, while the existing industry gradually becomes a cultural landscape. Therefore the main objectives of the project are to anticipate economical alternatives; define, protect and preserve industrial and cultural heritage; remediate existing ecological damages; and promote biodiversity and ecological protection. The initial hypothesis is to create landscape of coexistence where urban and natural processes could benefit from each other.

The relationship between research and design

From the beginning the research and the design have been closely related. The theoretical framework, problem analysis and statement, objectives and hypothesis, as well as research question, and methodology are all linked in order to frame and guide the analytical research and development of the design strategy. Nevertheless, theoretical framework plays crucial role in the project narrative and links theoretical and practical (methodology) parts in the context of the project in order to deal with problem fields and accomplish objectives of the project. The theoretical framework supporting the project is compounded of: Ecology, Ecosystem services and the natural capital, Landscape ecology, Green landscape infrastructure, Landscape urbanism, and Brownfield redevelopment. From there various methodologies were chosen in order to respond to research question: **How could the development of the Port of Rotterdam into a productive landscape park remediate existing ecological damages and give 'new meaning' to the economy of the port?**

Theoretical framework



Methodology

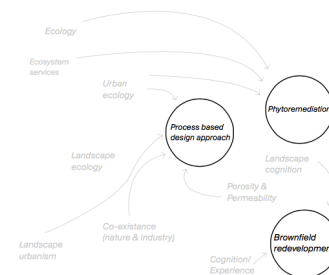


Fig.1 and 2: From Theoretical framework towards Methodology

The chosen methods include: landscape imagination (scenario making), design with nature (phytoremediation and sedimentation management), process-based design, brownfield development and sensorial-experience design. What lies behind these methods is that they are mainly coming from the 'landscape architecture' perspective but emphasize the theoretical framework of 'landscape urbanism', theory arguing that the best way to organize cities is through the design of the city's landscape, rather than the design of its buildings. In this way, it was possible to deal with such a complex urban system such as port of Rotterdam, and give multiple spatial and temporal dimensions to the project, while responding to research question.

More in depth, the methods in order to read and analyze the landscape are the mapping of land cover and open space typologies, the mapping of biodiversity patterns, as well as the pollution parameters from the environmental assessment documents of the harbor and therefore give overview of current problems and opportunities of the landscape. Current spatial manifestations behind economical processes in the harbor were mapped in relation with functional assets. Lastly high security and low permeability and porosity possibilities lead to interest in analyzing accessibility via mapping of existing routes and differentiation between different modes of transportation, recreation, contact with water and as well as the cognition and perception.

This thorough research and analysis of different layers of territory are essential resources for the design elaboration. The design outcome is a spatial framework that consists of several strategies that develop and guide the transition in time. The strategies are as well developed as different structure elements of the landscape: patches, nodes and corridors.

The relationship between the theme of the studio and the subject/case study chosen by the student within this framework (location/object)

In the Delta Interventions studio the urgent question is how new balances can be created of different aspects: safety against flooding, the development of livable and attractive urban areas, conditions for economic growth and conditions for nature and ecology. Flood defense interventions, urbanization, port development and nature development are strongly influencing each other. The question is how we can make designs for urbanizing delta areas in way that the different aspects can take profit from each other. Port of Rotterdam is located in the outer dike areas of the Rhine-Meuse delta and therefore is influenced by the climate change, which implications will affect both ecological and economical systems in the harbor. For this reason, the design of the transition of the port of Rotterdam into a productive landscape park is chosen, where environmental design can work in order to bridge the gaps between economy, ecology and the local inhabitants, while offering better quality of life, economic prosperity and benefits in terms of ecosystem services or wildlife regeneration.

The relationship between the methodical line of approach of the studio and the method chosen by the student in this framework

Delta interventions studio and the methods chosen in the project 'Landscape Imagination: Ecology as Industry' work on the basis of few similar aspects: the uncertainty and the climate change, and landscape infrastructure. Today, while we are trying to adapt our built and natural environment to rapidly changing urbanization conditions, scenario strategic planning offers a new method for design and planning. Delta Interventions studio specifically addresses the water- related consequences of climate change such as rising

sea levels, increasing peak river discharges and more extreme rainfall. Furthermore, it deals with a lot of uncertainties of the urbanization context related to water issues. In the same way, the project 'Landscape imagination: Ecology as industry' envisions the transition of an industrial landscape, and creates an adaptive strategy that could respond to several pathways of the future development. "Making deltas more resilient is not about 'fixing' climate change; it is about moving towards a systems approach where long-term comprehensive design strategies are connected to short-term (preferably innovative) interventions." (Ovink, 2016)

Parallel to the notions on uncertainty is the methodology of landscape as infrastructure. "Conceiving landscape as infrastructure can be characterized as a goal-oriented approach, where landscape is treated as an operative field that defines and sustains the urban development and ecological and economic processes are employed as formative design tools." (Nijhuis & Jauslin, 2015) Under this approach, the Delta interventions studio seeks to work with coast and river, planning and design of land reclamations, major flood control systems, drainage systems and irrigational systems as well as sewage and wastewater management and eventually design of multifunctional landscape modifications. The project 'Landscape Imagination: Ecology as Industry' works more with green landscape infrastructure that maintains and develops ecosystem values and provide environmental, economic and cultural benefits as a set of interconnected green space networks.

The relationship between the project and the wider social context

The petrochemical industry is one of the key economic drivers both in the Rotterdam region and on the global level. At the same time, it is No.1 polluter and cause for the climate change. It's impact on our environment in terms of soil, ground water, water, air and the loss of wildlife habitat are evident. As a an urbinst I would like to examine landscape as a medium trough which to generate the renovation and remediation of the industrial city.

The intention of the project is to establish a coexistence of different systems, programs and ecologies, based on theories of landscape urbanism and landscape ecology. The decision of design of a park is because parks by nature are already a place of coexistence, not just because they take on the infrastructural and ecological functions already displaced from urban areas, but they also create a place of memorable experience. With the project, I would like to raise the consciousness about the changing methodologies, theories and language that are fundamental for the urbanism discipline.

Today, there has also been a change in the discourse of urbanism and city planning, due the hybridization of 'urban' and 'natural' domains, into 'urban landscape', consequently we see that the topics of coexistence and multiplicity are becoming more familiar and are being deployed in practice of urbanism and landscape architecture. Under this lens, 'design for process', rather than designing 'comprehensive plans' that are static, rigid and fixed; will form integral parts of the discipline for the 21st century, with its capacity to deal with complexity, uncertainty and indeterminacy trough various scales and time.

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