

1. FASCINATION

-- What is the motivation behind this project?

The coastal zone is constantly changing, as a narrow stretch between freshwater and saltwater, the sea, land and air constantly change its shape and form into a variety of coastal landscapes. Those dynamic areas are often happened to be high urban area. Coastal urbanization will never cease and is often addressed as a process of encroachment on nature, the co-existence between urban and nature is the starting point of this project.

This project focuses on lower Thames Estuary, which is characterized by the presence of narrow beaches, open mudflats, salt marshes, natural low-lying land. Sea level rising may make the low-lying land at the southbank vulnerable to flood and coastal erosion, like Allhallows-On-Sea. While some larger settlements, such Southend-On-Sea occupies the relatively higher land. The strong contrast of coastal landscape and urbanization difference are what drive me to this area. How to balance the pressure and make each part play their best in the whole Thames Estuary with nature-based solutions in facing the floods threats is the main the point of this project.

2. RELATIONS

---- Relation between research and design

Research and design are supporting each other. Research provides theoretical and factual basis for design to be valid, design is an application and reflection of research. There is no succession between research and design, they could be carried out simultaneously. Research by design is a systematic approach of explor-

ing possible solutions by thinking in visual and spatial terms.

--- Relation between graduation topic, studio topic and master program

The graduation project starts from the studio topic, which focus on the dynamic relationships between nature process and social practices both in opportunities and threats for urbanization. My graduation project is about integrating coastal landscape and coastal urbanization. However, the project focused too much on landscape dynamics before P2 and less valued the urbanization process. With feedbacks from my tutors after P2, I mainly focused on density, mobility, spatial quality there three aspects in different scales. My graduation project is more focused on the urbanization process based on nature suitability, like the landscape resources, soil suitability, accessibility by infrastructure, but other social factors like regulations, social coordination, regional cooperation and policies are less considered in this project.

--- Relation between graduation topic and wider social & scientific framework

--- Social relevance

This project is talking about a city living with nature in facing hydrology threats in 100 years. Climate change is a global issue and influences our life in every aspect. The study of this project will hopefully provide some knowledge in dealing with low-lying land that is subjected to sea level rising brought by climate change and global warming. Through renaturing the city, we could re-imagining the activities in coastal area. Given to the site's compositional environment is not unique, some interventions could be applied in some other areas with same compositional environment.

--- Scientific relevance

This project aims to protect the land from the intrusion of sea by working with nature. There are soft and hard protections along the coastline, engineering solutions cannot protect land by working alone, it might be defeated by some stronger external uncertainties. However, hard protection is not always a bad thing, how to combine the human interventions with nature is one of the point in this project. The research of this project will hopefully provide some scientific methods on this question. I learned by studying the cases in dealing with floods, and then translated the interventions into my specific site. Those interventions in my projects could also be adjusted to other coastal area.

3. METHODS

Delta studio supports my graduation topic with teaching analysis tools. It focused on a systematic approach, which addresses the logic between research and application in site. My graduation is site-based, instead of giving a toolbox for the whole site, I am more focused on the logic of how and why I choose my project site, and why I introduce these interventions in that specific site and how it works. The relation of my project site with the regional scale and the possible interventions behind this logic is what I researched for.

Moreover, the research advocates working through scales and developing a methodology combined by analysis, synthesis and projection performed in plan and sections (transects). The research focuses on developing these methodologies and further reflects on human interventions with nature at different scales.

There are other analysis tools, like 3x3x3, but it is too superficial and cannot explain too complicated problems. Some other tools like GIS provides factual basis for design, using online GIS data for analyzing the accessibility gradient, thus understanding mobility network better and know what need to be improved.

4. LIMITATIONS & POTENTIAL APPLICATIONS

Limitations

As for the scientific relevance, however, limited by Author's urbanism background, there are some knowledge may be missing or not reliable enough when it comes to engineering solutions, like the operable seawall gateway. Another dilemma is that we apply known knowledge and technology for a coastal area in dealing with future risks, how could we be one hundred sure that the proposals will be adaptive to the future? Also, when it comes to density redistribution, it means some houses will be demolished, some new types of buildings adaptive to floods will be built. To what extent that we could intervene?

Possible applications and evaluation

New types of building adapt to floods will be introduced into the projects and new public transit will be built in new urban land, new port will be built for promoting a new but spatially direct transportation way between two banks. Wetland and saltmarsh at the southbank will be restored. Accessibility will be improved by a new way of transportation between two banks, the time on commuting will be reduced from 4 hours to 1-1.5 hours between two banks.