

# **Masters of Landscape Architecture** Project A Research Proposal

By Zhipeng Cai 3162990

## 01. Title

DAMP – Disaster Adaptation Mitigation Prevention

## 02. Sub-Title

Applying the theories of Landscape Urbanism to induce social and landscape development, in an effort to design more disaster-resilient cities.

## 03. Research Question

How can landscape architecture, under the theory of Landscape Urbanism, become a practice that we apply to urban development to prevent and adapt to disasters? What types of landscape morphologies are conceived from this practice and what effect do they have on the spaces and activities in the public realm of cities?

## 04. What

The subject I am interested in researching is contemporary urban morphology through the theories of landscape urbanism, specifically looking at how landscape architecture can be utilised to protect us from disasters and protect the environment from us.

I wish to develop a deeper understanding for the concepts of Landscape Urbanism, how it could affect urban morphology and in what way is it beneficial to us and the environment. I also want to find out how the landscape in an urban context evolves, what causes the evolution and how it can impact the city and its inhabitants. Specifically looking at public spaces such as town squares and roads, I wish to uncover their importance in the morphing and becoming of towns and cities.

I imagine this knowledge will be demonstrated and tested through design, by analysing case studies of existing public spaces in major cities around the world, I would be able to apply the findings on projects, and work out if the elements which make the project successful are universal or just situational.

I imagine that the end project would be a set of landscape elements or processes that aligns to the theory and practice of Landscape Urbanism. Collectively they would allow for more 'intelligent' urban morphology, which encourages adaptation to disasters as well as population growth.

At the street level, the programs are intended to be diverse, given that change, flexibility, adaptation and temporality are the main qualities of a developing city, governed by the notion of time and space. Multipurpose spaces are important for an ever growing multicultural world, where different activities can be catered for simultaneously. At the macro scale, the program will be focused on disaster relief, diversion, mitigation and prevention, following the principle of being flexible and adapting to change.

## 05. Why

This research topic is of personal interest to me because I am interested in how public spaces and the programs in such spaces change over time, what causes these changes and how does it affect the city? These changes are studied as urban morphology, in which cities experience many events, altering certain aspects over time in order to adapt to the event, thus changing the cities spatially, ecologically, demographically and financially.

Recently, two of the most popular topics influencing this phenomenon, are the process of urban sprawl and the effect of disasters, both natural and man-made. As a response to this, the movement of New Urbanism was brought forward to become the new model in which cities are to be planned, and developed. What is more interesting to me is the fact that the theory of Landscape Urbanism was proposed as the concept which succeeds New Urbanism, and now Ecological Urbanism is said to be more suitable to the sustainable development of cities than Landscape Urbanism.

Although what I know about each of these theories is very limited, I find it fascinating that change is happening not only with the cities but also with the concepts which are underlying. Even though most modern cities did not come about from these theories in the first place, their significance to how the world's ecological, financial and spatial growth/development will change is unmistakably apparent.

My position is with Landscape/Ecological Urbanism, not only because they seem to be most sensitive to the issue of global warming, but also using landscape architecture to solve problems is really inspirational to me.

I am concerned about the climate problems and disasters we face today, and to use the Queensland floods as an example, we are seeing the power of nature and how defenceless we are to it. I believe that planning to adapt our cities to these situations in the future is crucial to decrease the losses that occur in such incidents.

## Precedents

### Expo.02 Yverdon-les-Bains by West 8

This project is relevant because it integrated landscape architecture, architecture, infrastructure, art and ecological sustainable design in a site, which was then taken away and the materials recycled, which made it a temporal landscape.

### Happy Isles by West 8

This project by West 8 in collaboration with Svasek is looking at designing and implementing new isles off the coast of Belgium and the Netherlands. It is significant because the reason for the project is to protect the original coast from incoming waves, as well as to drop the sea level during north-western storms. This type of landscape architecture/ sustainable planning helps prevent disasters by diverting and diffusing potential hazards.

### Lilypad by Vincent Callebaut Architecture

This is a conceptual project of a floating city that is fully self-sustainable and has taking its inspiration from Biomimicry. It is interesting because it poses a question of whether our cities would one day indeed become like this, as we venture into space or if the world was to flood, what then would become of our 'landscapes'?

## 06. How

I will conduct my research by reading on various essays and articles on the topics of landscape urbanism and ecological urbanism, as well as analysing projects which follow their philosophy, then I intend to research what makes these projects successful in terms of how they manage issues such as sprawl, what the approaches are that they have taken to disaster-proof their respective cities and why have they done it in such a way. I can then critique, analyse, expand upon the processes in order to test them in my own project.

Various other techniques I intend to use in discovering and testing the processes and designs include model making, drawing, testing concepts onsite and through discussions on forums with other intellectuals.

## 07. Projection

Morphology – see last page.

## 08. Reflection

The studio project that is a key influence in my final year research project is PORO[US]CITY, from the Gum-B study tour. This project looked at the master planning of Wujin, a district under the jurisdiction of Changzhou in Jiangsu province. From a macro scale where the devised plan was to develop the major industries existing in the area and to predict a 10 year growth pattern for these industries as they spread. Then from a micro scale, where the Wolfgang precinct within Wujin became the site which demonstrated how different industries can all be contained within an area to form a multi-layered, interweaving cityscape.

At the macro scale, the developmental sprawls of the different industries were based on several principles. Firstly it was their initial location which dictated where they would spread and expand from; secondly was the availability of space, where the space requirements of each industry can be met; and thirdly it was determined by how the road and river systems navigated through the land, which also brings the people, and economy.

At the micro scale, the development process was similar to the macro in principle but was more influenced by the road and water ways, as well as surrounding topography. Protected and bordered by the steep topography on three-quarters of its perimeter, the industries here began to develop upwards, higher towards the centre of the precinct. Opportunities for mixed program spaces emerged, as different industries are connected physically through their buildings.

The project allowed me to explore and generate various situations and combinations of programs, but is neither detailed nor specific enough. I wish to use it as an example and follow through in my research project, finding out the 'successful' combinations as well as the unsuccessful, and analysing why.

I realised after the project that it lacked many qualities which would have made the design more complete, and was heavily focused on urban planning rather than landscape architecture. I would like to further develop in my final project what I've omitted in this, such as consideration for the ecology of the site, human scale spatial design, to accommodate the specific and varied activities, as well as a range of other processes which could respond to problem such as of sprawl, water quality, water management and pollution.



