

### **The relationship between research and design**

The project started from an initial finding that urban structure of the bay area is highly responsive to the change of economy.

The phenomenon derive from the design principle applied for most cities in the US. They perceived city as a growth machine, and the planners and designers firmly believed that the economic development of city can continue when the spatial structure of city has a strong connection with transport system. For a long time it was not only crucial for freight but it also influenced on the flow of information for business.

However, the advance of information technology broke the symbiotic relationship between city structure and transport system. For this reason, edge cities are facing a new urban transformation to keep up with the change of economy. Yet there is no new design method or new structuring element that can replace the highway oriented design.

Last decades, the idea of Landscape urbanism have been discussed in the field of planning and design. It seems to be a possible option for the new urban transformation. Nevertheless, it does not provide an actual design method. For this reason, this paper focus on developing a design method based on landscape urbanism for a complex case.

The case is not only facing the issue of urban transformation, but it also has flood problem derived from sea level rising. There is a neighborhood called Alviso, which is completely exposed to the threat but this is not merely the problem of the small town. It is influencing the economy of the region as it affects Silicon valley.

For this reason, the design method should be able to manage the new urban transformation of edge city with both flood protection and management of development pressure from silicon valley.

In the process of developing the design method, Spacematrix was used to materialize the concept of Landscape urbanism. It is from the point of view that the quantitative part is lacking in Landscape urbanism while they emphasize too much on the new idea for design. Basically, the landscape urbanism tends to neglect the part, which is essential for materialization.

However, that does not mean that landscape urbanism is only benefiting from Spacematrix. On the contrary to landscape urbanism, spacematrix is only about the quantitative part. It does not have a certain point of view towards design process. For this reason, it is usually either used for analysis process or the moment when the final product of design has to be tested. Basically, it never been considered as a tool for design process. For this reason, the paper attempts to create synergy by the marriage between Landscape urbanism and spacematrix, leading to a new design method of landscape urbanism.

As a consequence, the vision for re-structuring the urban spatial structure was delivered from the idea of filling the density gap with the new development along blue-green infrastructure, which becomes the spine of

new urban core of San Jose. The important part of this proposal is it is developed with multiple layers of development rule in different scales. The rule for block across neighborhood, district, area, city and it finally reaches the regional scale. Basically the vision derived from landscape urbanism is materialized by the development rule for block from spacematrix.

The vision of the region helps to visualize the prospection of urban transformation, which is the conclusion of 3x3x3 analysis. It shows what will be the next shape of city in the layers of occupation, nature and infrastructure. The most noticeable part is these three layers resemble each other. In other words, there is no clear separation between them as it was in the previous periods. The structure of nature becomes infrastructure and the occupation follows those structures.

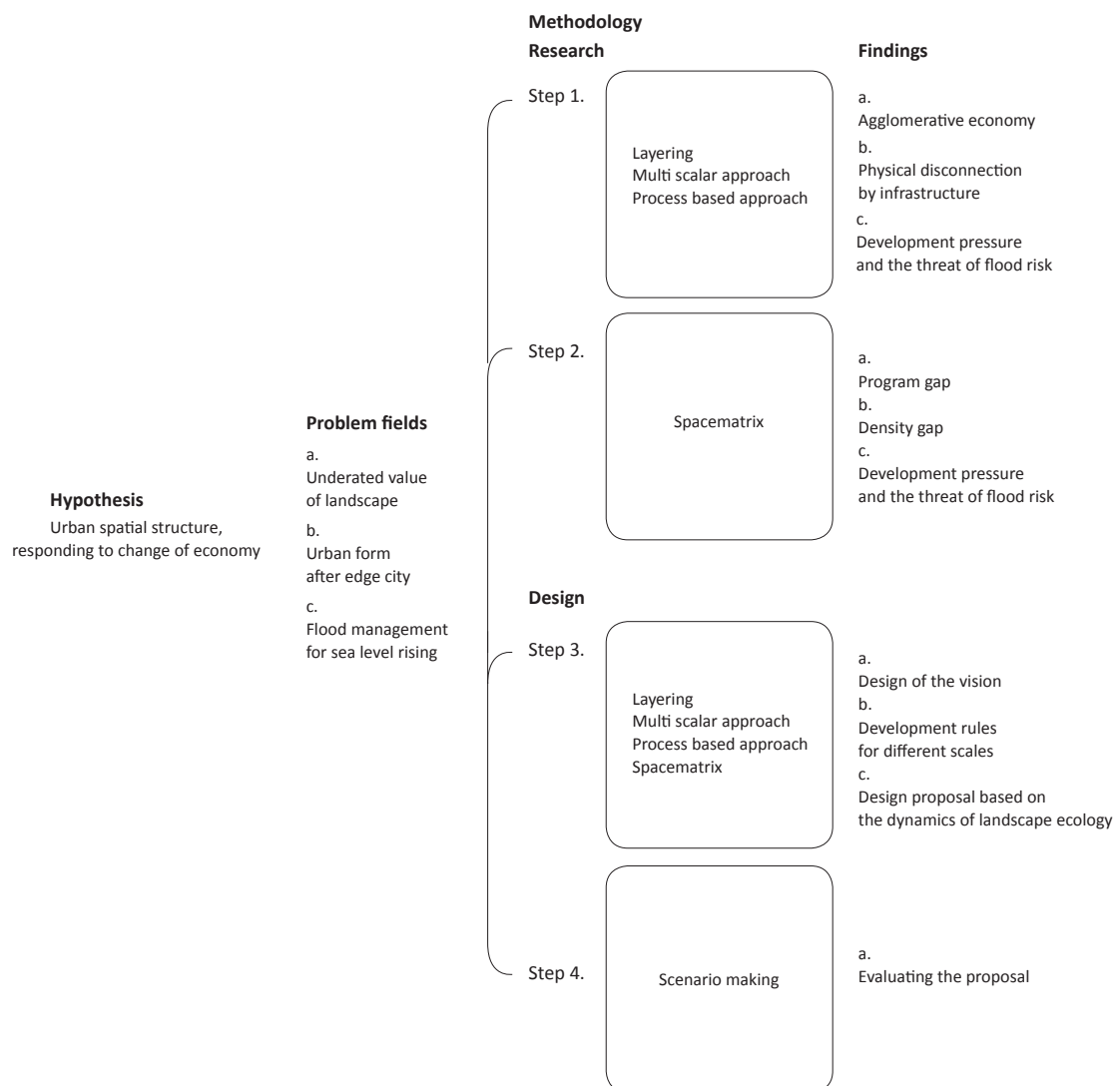


Figure 1. Process of the project

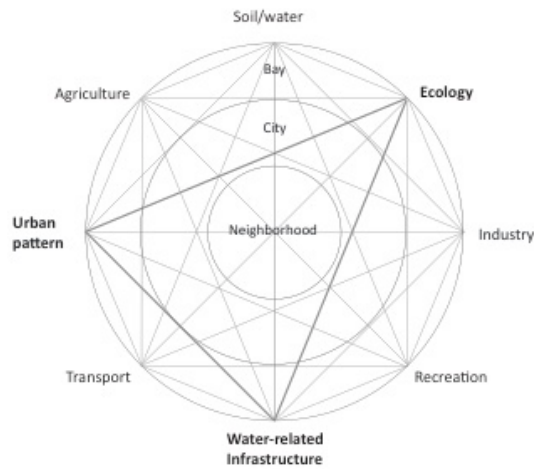


Figure 2. The structure of the design proposal (final production)

### The relationship between the theme of the graduation lab and the subject/case study

The theme of the graduation lab, Delta interventions, is 'Bay Area Resilience by Design Challenge' launched in April 2016 by Chief Resiliency Officers from San Francisco, Oakland, and Berkeley, Bay Conservation and Development Commission, Association of Bay Area Governments, Bay Area Regional Collaborative, San Francisco Estuary Institute, SPUR, the Climate Readiness Institute, and the California Coastal Conservancy. Inspired by 'New York's Rebuild by Design' the design competition aims at addressing challenges affecting the resiliency of San Francisco Bay Area neighborhoods, environment, and infrastructure in an era of climate uncertainty. In collaboration with the University of California, Berkeley, College of Environmental Design, Delta Interventions Studio seeks to develop innovative projects to increase Bay Area's adaptive capacity and local area performance in response to future uncertainty in climate and urbanization patterns.

I chose Alviso among 10 different target areas, and I developed a performative/ multifunctional designs and adaptive strategies for the uncertainties shaping the future of the bay area. An additional part that I added to the theme for my project was about managing the underlying logic of city shaping in the US and its influence on the future of the bay area in terms of density. As the density control has become a classical part of urban planning practice, the important is often neglected in the new approaches of urban design or planning theories. In the case of Landscape urbanism, which I used as the foundation of the argument in the thesis, it only gives vague ideas about how to deal with the issue, but concrete methods to design the area for the problem. For this reason, I took the density control via spacematrix as crucial as the design informed by the dynamics of landscape ecology. It helped me to step further from the given goal from the studio.