

## Reflections

The "from line to zone" program is a comprehensive urban transformation dealing with complex situations of the context. Through the research design, it's found that it is important to explore the possibilities by discussing different scenarios in order to make more persuading and stronger design framework. It is crucial that the design explorations are powerful enough to show the ideas of a promising future in order to have effective discussion with the stakeholders. The flexibility of the designs is conveyed by supplying reasonable design possibilities to the publics, the private land owners and the government institutions.

### Critical Reflection on the Study

The structure and argument of the study is coherent and clear. Firstly, from the perspective of academic research, the research framework is rigorous, built on the research questions and exploring and answering them respectively. The context study including problems and opportunities plays an important part in revealing the most crucial demand indicating the possible interventions. From the perspective of designer, the design exploration makes good use of the existing situations and conditions of the linear riparian area without making too much dramatic changes of the environment. The strategic areas are successfully defined, which play a crucial role in interacting with each other and contributing to the whole system. Even in a limited range, the series of interventions still show strong capability of influencing the designed "zone". The design proposals keep a balance between practical and forward-looking sections.

However, as the designed scale is large and refers to quite different and complex circumstances, there are still numerous aspects needed to be discussed and studied further. These can be summarized in three aspects: spatial and functional design of the system, public space development with complex ownership, and temporal dimension interacting with the program.

### Reflection on the Method & Theory

#### 1) Methodological Framework

The research is built on the argumentation of designing an urban river (canal) into urban landscape infrastructure. Based on the contemporary urban context of Miami city, the proposed design shows a strong instrument for driving the linear riparian zone towards a sustainable and healthy development orientation. The essence of urban landscape infrastructure is interpreted, illustrated and unfolded through specific and concrete spatial, ecological and functional interventions at different levels with planning schemes and

detailed designs.

## 2) Relation Between Research & Design

Design exploration serves as the core content of the research. But the significance is more than just a practical design scheme of Miami. The research sets a rigorous theoretical framework to lead the design explorations. It is exhibited that the design acts as a tool for discussing the future possibilities and proper proposals to promote the negotiation with the public, government and the land owners. The research framework guides the design orientation, and in turn, the design exploration optimizes the framework continually. The framework promises proper direction of study and makes the exploration more convincing through studying based on theories and precedent study. Also, the research-based design has more relevance to other design projects which have the similar context as Miami River & Canal.

## 3) Understanding Urban Landscape Infrastructure

The essence of ULI design is to redefine all the systems of a city through the perspective of landscape. It is not only about landscape design or urban design, but a synthesis of the built environment of a city towards sustainability.

## Reflection on the Design Content

### 1) Spatial and Functional Design of the System

It is important to reflect whether the intervention on natural and infrastructural aspects work properly under the proposed program.

#### Water System:

For the canal part, the proposed intervention of water system and hydrology is mainly about providing buffer zones and purification functions by ecological infrastructure. What has been planned now is just partial improvement and upgrading mainly about the riverbank. The current design seems more practical. Although there would be new serious problems if the way of water management is altered, the design proposals need to be checked. Does the current intervention plan have strong capability to transform the river from an artificial canal into a closely connected riparian area providing highly effective ecosystem services? It is important to reflect whether there is any smarter approach to improve the water system.

#### Green and Ecology:

As far as the design idea is concerned, the program tries to restore the local ecosystems through creating more green space composed of local ecological communities. Although it is admitted generally that ecological restoration is not just trying to simulate the ecological conditions in a historical stage, it is

important to reflect that whether it is an appropriate definition of the ecosystem improvement plan. An ecosystem combined with its ancient environmental memory is more helpful for shaping a good city identity for the locals. The eco-design should exhibit the native and unique ecosystem characteristics but not just general ecology. The program still has potentials to be developed in terms of this section.

## 2) Public Space Development with Complex Land Use

The elevated green public space strategy aims at the complex land use. The industrial area and some other privately used land are preserved for the current stage. The idea suits the contemporary situation, supplying potential space for new connection and urbanization. However, the problem is that such intervention is under risks because it might be hard to be accepted by the private land owners even though they will be benefited a lot economically from the spatial changes. The practice depends on the specific implementation schemes affected by many factors including construction agenda, the orientation and location of new commercial services, and the governance compensation mode, etc. The program needs the aid of other disciplines to set a more thorough and considerate framework.

## 3) Temporal Dimension Interacting with the Program

The spatial development strategy is related with the temporal processes. The strategic areas own different priority to execute. For instance, the mining lake restoration needs to take a long time with slow but great benefits from environmental improvement. As a rural district, its construction cost could not be very high. It is smart to make good use of the self-adjustment ability of natural environment. In this sense, the restoration should start at the very beginning. The construction of the new green public connection interacts with the restoration process. The necessary infrastructure such as viewing parkway and boardwalk starts to be built when there is some obvious improvement of the restored ecosystems. It provides a platform for the public to experience the change of natural landscape during several years or even decades.

The natural ecosystem restoration is easier to predict. However, the urbanization process such as the transformation from industrial into commercial-industrial district is hard to have an accurate expectation. For the portion which is not controllable, it is supposed to have more adaptive ability to face future changes. In this sense, a bottom-up strategy is more suitable to the program. Improving spatial quality of the targeted area is the foundation of achieving the goals.

## Reflection on the Program Framework & Stakeholders

The "From Zone to Line" program includes 27 projects in total. The cooperation among private investors and governments of different levels is significant for financing so as to implement such an ambitious program. From the governance perspective, the environmental or ecological restoration and urban green

space improvement present great social benefits to the public. From the perspective of other investors, the promoted spatial quality provides more commercial values and economic benefits. In this sense, defining appropriate common interests plays an essential role in integrating social capital and achieving the same goal. Private capital is still able to contribute tremendous benefits to public services and facilities in the condition of getting enough revenue.

## Generic Value of the Research

- 1) It provides a new perspective of how the historical (ecosystem) values could be employed for sustainable development of the current rapidly growing cities.
- 2) Through presenting a more powerful role of landscape infrastructure in integrating urban systems and leading urban development, the research proposes an effective approach of dealing with urbanism issues from landscape perspective.
- 3) The research interprets how to redefine infrastructural design as an interdisciplinary design effort in a specific and vivid way.
- 4) It illustrates how ecosystem services are connected with landscape infrastructure, as well as how ES helps to explore infrastructural design orientation.

## Lessons Learned

The research helps to build a complete academic study with strong argument. The educating significance is that it tells the role of design is not just to give a design result, but by employing design exploration as a tool to do attempt of future possibilities. Clear research objectives and questions are important for helping to keep the designer in a right and clear research track. With the instruction of the research questions, the design assignment can be in obvious direction. The clear objective defines the main clue and other sections at the service of the core design goal.

The design is supposed to illustrate how the system functions and how the interventions contribute to the system. The design at different scale aims at interpreting the inner operations of the system.

## Outlook

The research of designing Miami River as urban landscape infrastructure is promising, providing new perspective of urban development of Miami. In order to achieve the potential powerful value of such study,

there is still much work to continue.

Firstly, more accurate current situation of the site should be investigated with useful big data, for example, the soil condition of different areas and the hydrology indicators. Secondly, the research has an ambitious target needing the help of experts from diverse backgrounds such as architecture, urban planning, engineering, ecology, hydrology and botany. In addition, as ecosystem services are important theoretical background, there should be more scientific quantitative research on ecosystem services as design indicators. Last but not least, the specific spatial design morphology still needs to be optimized to implement a more practical program and related projects.