

P 4 REFLECTION

The Zone of Water Purification Design in NE-Midtown

The project seeks to establish a new connection between the traditional wastewater purification infrastructure and public space, to allow a scheme that will not only eliminate the regional water pollution issue but allow a direct interaction between the people and water resources they live by.

Complex Projects

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INTRODUCTION

Project Description

The worldwide crisis in environmental resources, such as deteriorating water resource is intensifying. In Manhattan island, a metropolitan area, the risk is also extremely remarkable. In these days, the increasing water pollution, mainly due to climate change, aging infrastructures and the regional expansion, have had an adverse impact on Manhattanites' habitat and health, which are mainly embodied in the growth of pollution level and the detachment of natural waterways, such as East River. New answers need to be sought for the noticeable urban issue that related to both social and architectural matters.

The graduation project 'The Zone of Water Purification' seeks to provide such answer through creating a new connection between the traditional wastewater purification infrastructure and public space, to allow a scheme that will not only eliminate the regional water pollution issue but allow an intimate interaction between the people and the water source.

The chosen site is located on the shoreline of NE-Midtown, where the main CSO (Combined Sewage Overflow) outfalls are distributed. Therefore, the sewage can be efficiently collected by the new water infrastructure which is connected to the outfalls. After the treatment, part of the clean water can be delivered to the surrounding communities for re-use, which encourages the ecological significance of sustainable use of water resources. Also, the site is one of the nodes of the Waterfront Greenway Program. It will create open space such as thermal bath for the public, providing residents in some densely populated neighborhoods with enhanced access to the waterfront. The institution of environment protection of department is conducting the daily resource survey, while organizing environmental education. Therefore, the building type of the new project defined as **Public Infrastructure**. It is comprised of three main functional requirements: *Wastewater purification infrastructure, Bathing facilities, and Soft Institutions*.

The project as one of the strategies for group vision has an important role to play. 53rd Street could become a preferred crosstown route for pedestrians, liking its extraordinary assets with innovative street design that puts people first. It is lined with cultural treasures, such as MOMA. The proposed project is set at the end of the street, becoming a new vital engine will enhance the experience of walking across the area and add prominence to these cultural and architectural jewels. Furthermore, the coastline of East River was once dominated by several industrial wharves for production and transportation purposes. Despite the piers have been gradually removed over the last decades as the focus of the industry shifts to Hudson Yard. The proposed site looks to the historic composition of the area, the intimate connection between land and water will be facilitated by a web of structures that bridge the two environments. One of the important design goals of the project is to purify swage and supply clean water source for neighborhoods. It is believed that the introduction of new buildings will consume some of the social resources, thus, the design explores to not only provide a self-sustaining model but contribute to the community future sustainable development.

Aspect1:

The relationship between research and design

Looking backward, the elaborate research session conducted in the last semester proved essential to the outcome of design. Firstly, the great importance of the group research which last half a year, which allowed us to deeply explore and be familiar with the complexity of the site, New York Midtown. It's also during that group work stage I made my decision to get into the sight of the local environment crises, such as water pollution. Design process highly revolves around the research. Through re-examining the stages of the presentations, a gradual 'deepening' of the ambitions and intentions becomes clear. It started with a self-sufficient water tower typology, which is inspired by the building styles and environmental issues in the research region. Then since the continuous of the finding and argumentations, the storyline is gradually becoming stable. It defined, during the intermediate presentation, the main functionalities involved in the new advanced building. The research of the overall area contributed to the formation of the design objects, while the architectural design process got me realized the inadequacy of the specific research. For example, when I was designing the circulation of the water purification plant. It was so difficult to achieve a workflow within an enclosed space, although there are a lot of precedents could be referred to. My approach is by drawing conclusions of those cases, making diagrams, the principle of the purification workflow is kind of clearer, then the circulation is created. But some part of the design, like the technology, still remains to be confirmed. Generally, this reciprocal process of research informing design and design informing research, paved an essential path for deciding on the multitude of small decisions that result in the final design.

Aspect 2:

The relation between graduation topic and studio topic.

The theme of the project 'The Zone of Water Purification' is very much consistent with the original ambitions of the studio topic which seeks to the answer the main question: how can we design homes, neighborhoods and livable communities that can contribute to making Midtown mixed-used and diverse and open to all. The main focus of the project is on the local water issues, it is responding to several other aspects as well, such as public space, mobility. Since the midtown is suffering from the loss of water culture, health problems because of the increasing water pollution, the design is an appropriated intervention to tackle this issue. However, the complex conditions in Midtown define that a pure infrastructure is insufficient. The positive point of the project is to combine the public appeal and municipal facilities, acting as an environmental education engine. Furthermore, collaborating with Transitional Hub Project It also encourages biking and helps eliminate the congestion. In this sense, the main objects of the projects is in line with the intentions of the studio.

Aspect 3:

The relationship between methodology of the studio and method chosen.

The studio has a typical and clear research methodology serving as guidelines of the year. Generally, it was educative and inspiring to start with an urban context research, then zoom into the architectural scale. Several approaches taken during the process were quite useful. For example, the model making, it is an effective for us to gain knowledge of the characters of the research site in the very beginning step. The developments of the site model by adding qualities to urban design made the group vision more convincing. Another main method is mapping, which definitely helped us get deep insights of the city through different aspects, such as history, densification, mobility, and environment and so forth. Others like, taking video, field trip were applied to enable students acquire the knowledge as much as possible. Those methods were simultaneously used in the individual design process. But things are not always carried out well. Sometimes it's hard to achieve the goals because of the differences of research between urban and architectural scale.

Aspect 4:

The relationship between the project and the wider social context

Nowadays, water crisis is becoming of the main emergencies people, local and global, are encountering, it is highly related to a wider range of social sense. It influences the urban development and is related to community health. How to deal with it in a specific area while it is becoming globally concerned? How to reverse the situation that the increasing culture of detachment of the natural water resources? How can we make the changes towards sustainable energy sources? How to establish an intimate connection between people and the energy source they rely on? The project could be an architectural experiment touching the issue about infrastructure and daily energy.

Aspect 5:

Ethical issues and dilemmas encountered during graduation

The final phase of my studies is quite special since we are experiencing a tough period- the outbreak of the coronavirus. But I should regard the final phase of my studies as the most precious period, which proved enormously educative for my coming career as an architect.

To conclude, I would like to give some short comments on the study process. Both I and our tutor need to be more sensitive but patient. After some initial struggles with choosing my point of departure and thematic focus, I experienced my design process as an explorative process but sometimes making steps backward. Not only the focus of the topic, but the choice of the proposed site should be more reasonable and practical, it has to support to the development of the project, while the project is a right intervention to the chosen site. Although the outcomes of the design response to the neighborhoods to some extents, the challenges and dilemmas I have encountered when dealing with the site context, like the sight, high-speed road, structure are not quite sufficient.

Structural and climate design, technical elaboration are important parts of the architectural design. These details will directly impact if the concept of the project is feasible. Lacking of interpretations of structure, materials and technology, a building could only be a paper art. This is an issue we talked a lot during the tutorials. There was a struggling time when I was dealing the circulation and the stability. How to make the building more expressive and the circulation more humanistic.