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## REFLECTION

### - RESEARCH CONTEXT

Urban agriculture encourages people to slow down and get back to the nature, to create conversations with others, to live a healthy lifestyle. Urban agriculture provides a new perspective for answering the question about how to make our cities more livable places. Situated in the urban context, the issues, limitations, advantages and potentials of urban agriculture are becoming even more immeasurably complicated. In order to generate comprehensive and holistic design, landscape architects need to deal with the aspects of spatiality, ecology, sociality, and so on. The essence of urban agriculture is the constant communication in the city with space, people and the nature, which implies the character of interconnectivity. Instead of fragment ideas, to perceive urban agriculture as a cohesive synergy helps to the full potential of ecological, social, economic and cultural value.

In the context of the Netherlands, the meaning of urban agriculture is far more than food, but an effective way of activating space to encourage social interaction and healthy life. To understand the role of urban agriculture, a question I need to know is the role of city on urban agriculture. The city as a mega scale has various spatial typologies - How these typologies support urban agriculture? What are their potentials and limits? In addition, the city as an organism is always changing and growing. It is important to realize that we need to take into account the uncertainty of the future. How a changing setting provides the flexibility for developing urban agriculture?

Another question turns back to the role of urban agriculture. I explored this level when I was writing my methodology paper about rethinking urban agriculture. For me, it is not a patchwork, but has to be an integrative and permanent section of the green infrastructure within the city. Urban agriculture should

function as a synergy strategy that embraces multidimensional and trans-disciplinary characteristics. There are three sectors of urban agriculture: physical environments, actors and metabolic flows: 1) Urban agriculture requires space to implement; 2) It indicates different kinds of activities (such as education, culture and recreation) and needs citizens to participate; 3) Urban agriculture integrates with green, gray and blue network, supporting the flow of movement and flow of plants and animals.

With above considerations (the role of city on urban agriculture/ the role of urban agriculture on the city), I worked on my research. The research methods comprise literature review, data analysis, mapping, observation, typology study and interviews. There are two main categories of my research contents: the case study and the site study. I studied these categories simultaneously because they will inspire with each other.

## **- RELATING RESEARCH AND DESIGN**

The case study (Frankfurt, Havana, Tokyo, and New York City) let me understand the development of urban agriculture needs multiple driving forces to support. There are three main factors that contribute to the implementation of urban agriculture: the supportive policy, spatial feasibility and participation of citizens. Though the influence of these factors varies from different cases, none of them can be neglected. The supportive policy encourages the action of citizens, the spatial feasibility leads to the physical environment to implement urban agriculture, and the participation of citizens helps to promote the movement. As a landscape student, I paid more attention on the spatial feasibility. Since four cities have their own morphology, how urban agriculture is represented within different contexts? My curiosity guided me to study the relationship between the morphology and the pattern of agriculture in the city. I used the mapping to trace and compared. In order to get a deeper understanding of spatial forms of performing urban agriculture, I read and collected their spatial typologies from these cases. I found out that the spatial typologies of urban agriculture vary from cities to cities, derived from the morphology, and most of them did not purposefully create a new space for urban agriculture but utilized the existing potential space, for instance, the leftover space. Let me give an example of this. The super high density of Tokyo leads to the dot's pattern of urban agriculture: citizens recreate all kinds of small-scale space such as corners, street sides and vacant lots to grow food. Urban agriculture in four cases all have their own characteristics. I realized that what determined the differences of spatial forms was the city morphology, like DNA of a city, which made urban agriculture special in different cities.

Inspired by these cases, I used what I learnt to analyse Rotterdam Zuid: what its morphology looks like; how its pattern developed from time to time; what types of spaces contain inside. The area is quite large and I worked a lot. I would like to demonstrate urban agriculture is not a patchwork; it has great potentials to happen in different kinds of space and different locations with different scales within the city. 'What types of space can be used to develop urban agriculture in Rotterdam Zuid? Where is the potential space?' I kept

these questions in mind all the time and visited the site many times, trying to find the potentials. During this period, I documented the typologies that exist in Rotterdam Zuid, using typology study as an analysis technique. The typology study worked effectively that provided the basis for my design period. This process helped me to develop the idea of integrating with the urban infrastructure, trying to create a set of more flexible strategies.

## **- DESIGN PROCESS**

The research phase helped me to understand what I need for the design project, and the problems I wanted to tackle, though I struggled for a long time trying to order everything into one coherent framework. Since the graduation project started, my study realm focused on the city and different scales within the city – the interpretation of the morphology and spatial typologies of the four cases, the study of Rotterdam Zuid. Unlike design for a specific site, the context of city itself is large and complex, including a wide variety of spatial typologies, cultural pluralism, different needs of citizens, etc. In terms of urban agriculture, the heterogeneity of the city leads to different forms of space, different choices of food production. It is crucial that the development of urban agriculture needs the advocacy of citizens: they are the actors in the movement. Accommodating the complexity and uncertainty becomes one of the main considerations of the project.

The purpose of the project is not about finding a place to design an edible garden, but seeking a strategic planning of integrating urban agriculture into part of the green infrastructure for Rotterdam Zuid. The project hopes to open up the possibilities of urban agriculture to inspire people like planners, decision makers and residents. How can I develop the strategy for a healthy green structure in Rotterdam Zuid that communicates both decision makers and citizens? With the main design question and understanding of urban agriculture and site analysis, other design questions arose: 1) How to integrate urban agriculture into part of the green infrastructure in the city? How the city supports this possibility? 2) What types of space provide the spatial feasibility for developing urban agriculture and how?

The proposal based on the collaborative communication combining the supportive policy, spatial feasibility and the participation of citizens. For the first question, the project is a vision that embeds a city-scale green network within the city. Consequently, the proposal is not a finalized space of a certain area, but a flexible framework – the healthy green structure. This graduation project aims to generate a large scale, long-term and flexible vision as well as a set of spatial tools of urban agriculture to elaborate into the large-scale vision.

Integrating urban agriculture into part of the green infrastructure in the city determines that I cannot just focus on the vision of food, but also the urban ecosystem and other green infrastructures. The interaction

between urban agriculture and other green infrastructure enriches the programs and experience in the city. Taking them into consideration from a broad perspective, the essence of promoting urban agriculture is actually about reconfiguring a healthy green city based on the existing landscape and the potential leftover space. The vision for Rotterdam Zuid is the healthy green network, which contains agriculture and non-agricultural programs that dominated by parks, community gardens, collective yards, playgrounds, and sports activities, etc. It represents a connective landscape: a connective condition for the flows of not only pedestrians and cyclers but also animals and plants. The network integrates urban agriculture as part of the ecological model. The connective landscape strongly supports food growing since it restores the fragmented landscape and provides the opportunities for pollination activity.

The vision requires an operational system that intersects top-down mechanisms and bottom-up initiatives, which aims to create an interaction between two approaches. With the vision developed, I concentrated on the second question: what types of space provide the spatial feasibility for developing urban agriculture and how? If the vision could be considered as a framework, then the second part is about the spatial tools - a guidebook of citizens and government. Spatial feasibility means to provide a set of new agricultural spatial intervention through different scales. In this part the typology study helps me to translate the research into design that not just for professions but also easy for citizens who interest. The spatial toolbox is like a resource as well as catalogue about tactically transforming the space for urban agriculture, also combining with other activities. The goal is to inspire people to act and have their own design interpretations for participatory design.

I focus more on the semi-public and public sectors of space. I re-evaluated the recorded typologies and selected the relevant types of space suitable for urban agriculture. Each type has one or more corresponding solutions. The basis content of the spatial tools comprises the identification, the transformation and the involvement. The range of spatial typologies varies from different scales. From the smallest scale - the block scale, the transformation can be achieved within the collaboration in the neighborhood. As the scale getting larger, the way of transformation requires more involved partners. The toolbox does not indicate a finalized design, but opens the possibility for unexpected results. The tools can thus be a useful connection between the top-down and bottom-up collaboration.

## **- RELATING TO THE WIDE SOCIAL CONTEXT**

Although the graduation project started from urban agriculture in the beginning, it proposes a multifaceted design for the outcome - urban agriculture is going to be integrated as part of the project, not the whole project. The strategy tries to provide a new way of developing green network for Rotterdam Zuid. I believe the term 'urban agriculture' is more meaningful and can be enriched in different ways, not only about space for food growing or gardening, but also about creating a healthy setting for that indirectly. During this process

we already benefit from multiple aspects.

The attempt is to reconfigure the relationship between urban context and landscape, especially the redevelopment of the leftover or neglected space. The generality of the tools is also important. It contains flexibility, which has possibility to be adapted in the city according to different urban forms. The tools redevelop from the spatial types and enhance their features. It is not a fixed design; I believe it has potential to generate unexpected design by others.

On the other hand, it is not a general process of intervention. Inspired by urban agriculture that everyone can join, the strategy and tools should be involved citizens in the design process in a democratic level. The project aims to encourage the citizens to care for their living environment. They can even initiate and implement the small-scale projects themselves, from the private to the collective level. The strategy and tools play a role in facilitating citizens. Though some process other actors will participate, such as housing association, residents still take the lead. For the large-scale projects, the top-down actors direct the main process, but opinions from the bottom-up level are critical. In this way the design can be accustomed to the needs and interests of citizens. Different actors can contribute into this process. This process might take times to work out because balancing between different needs and reaching consensus sometimes are difficult. However, what will be intervened and improved are not just spatial qualities, but also social connectivity. As the urban project, involving citizens is essential. We have to admit conflicts must happen, but the sense of ownership and responsibility will be also developed. The project provides for citizen and city collaboration.

The vision of the healthy green network and the tools of the spatial intervention of urban agriculture consist the main part of my design. The process is inspired by Alexander Christopher, who believed that the structure of a town could be woven much more deeply, more intricately, from the interaction of its individual acts of building with a common language, than it can from a blueprint or a master plan. The future is unpredictable and the city is always growing. I gave my own interpretation through the design process: considering the open network is a large-scale pattern, the strategy provides the rules of growth; the spatial tools are the knowledge of small patterns for people to guide the growth of the large pattern. The strategies are flexibly interpreted, arranged, and assembled. Slowly, piece-by-piece, every intervention or transformation helps to construct the whole network, collaborating and interacting for a healthy green future.