"NEW MANNAHATTA 2100": Re-interpreting the urban patterns in Manhattan island, NYC

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New Mannahatta

The aim of the reflection is to understand whether the methodological approach for the project worked, to understand "how and why" and what was the outcome of the research.

1. The relationship between research and design

- How did the research influence the design/recommendations and how did the design/recommendations influence the research?

- What is the value of working (approach, used methods, methodology)?

The project is driven by the idea of research by design and vice versa following a multiscalar approach starting from the metropolitan scale to the local scale. In order to answer the research question " What is the interpretation of the grid in the face of exacerbated climate change in Manhattan in order to achieve a flood adaptive system of interventions?" it was crucial for me to dive into literature and analytical mapping in order to understand the correlation of the challenges with the gridiron plan. The process was fruitful since the outcomes led to important conclusions about the influence of the grid on flood vulnerability. The grid structure seems significant for the spatial configuration of a city and despite the criticism that the gridiron plan of Manhattan received due to the distortion of the natural landscape, the design project proved that the grid can incorporate both natural elements and social incubator nodes.

The analysis starting from the metropolitan scale led to the selection of specific sites for closer investigation. The chosen site for detailed design was based on the restrictions posed by the historical value of the area, the differentiation from the typical grid structure, the flood vulnerability, the housing densities and the limited public spaces. The selected site serves as a design pilot for the other two sites and potentially for other parts of Manhattan metropolitan area. The creation of a design system through the repurpose of porosities and grid redefinition works in multiple scales of the project. The research of the graduation project was based on design and vice versa through the pattern investigation and the study of related design references.

The feedback gained from both my mentors was more than useful since they also motivated me to look back and investigate in a wide range of scales how and why I am proceeding to every research and design exploration. Birgit and Luca supported my concerns from the very beginning of our collaboration. Moreover, I am grateful for the fact that they insisted on narrowing down the project workload despite my tendency to solve the problem statement by testing the design in more than one selected sites.

All in all, the approach towards the answer of the Research Question in combination with the advice from my mentors, helped me recognize the importance of multiscalar analysis and design by research. The approach was vital in order to address the challenges in an aim to achieve the Flood Resilience, Porous City and Social Inclusion.

2. What is the relation between the graduation project topic, the Urbanism master track and the MCs AUBS program?

Manhattan constitutes a complex urban environment with multiple drivers of change. My focus on mitigation of flood risk and its impact on Social Inclusion and housing densification strategies has been approached across scales with specific focus on Design on local level through the redefinition of the grid in the framework of creating a pattern language.

The cross-scalar approach of the studio starting from the regional scale and ending at the neighborhood scale has been a fascinating pro-cedure for me. The objective of the future public space, the redefinition of the urban landscape in the framework of growing porosity and plurality constituted a challenging voyage for me to explore through my thesis.

Bearing I mind that through the thesis I am dealing with multiple scales of intervention, I think that it has close relation to most of the tracks in the master's program. The local scale has to do with Architecture and built environment through the design patterns. The Landscape track is much related since I am dealing with solutions towards flood resilience using landscape elements. Building technology is probably related since the incorporation of green – blue spines in the urban core involved a more detailed study of the street profile. Moreover, taking into account that the MBA track has to do with management, this sector has a close relationship with the graduation project considering the close supervision of the interventions in the public realm.

Last but not least, the topic incorporates the principles of Urbanism aiming to benefit both the society and the environment.

3. Does the grid foster the desired Flood Resilience, Porosity and Social Inclusion?

Despite the criticism that the grid plan received, the project proves that the grid application as a tool of organization in the urban context when it is properly designed, can be more than beneficial towards the Flood Resilience, Porosity and Social Inclusion. The existing grid structure in Manhattan includes only a road system mainly for car use. The redefinition of the grid in the project trough the incorporation of green – blue corridors that function under a system according to stormwater management can benefit the metropolitan area both socially and environmentally. The social incubator nodes including a network of public spaces connecting with the new spines, indicate that the porosities of the existing blocks in the grid can be repurposed.

4. What is the value of transferability according to the project results?

Part of the research towards the possible design applications was devoted to the investigation of reference projects across the globe dealing with the challenges of the graduation topic. The grid redefinition in Manhattan by the incorporation of green blue spines like in the case of Cloudburst formula in Copenhagen indicates that the same principle could be adapted to related urban environments with flood vulnerability. The watersquares designed in the selected site could also be applied to other urban contexts like there are already in Rotterdam, the Netherlands.

The most important part of the project is that every design solution belongs to a system in order to achieve the Flood Resilience, Porosity and Social Inclusion. The holistic approach is the unique element of the project, a strategy that can also be applied to many other cities in the world that deal with the same challenges.

5. What conditions are necessary for the implementation of the project? (legally, financially, politically, societal)?

Legal conditions

The application of such a project requires the incorporation of a green – blue network into the grid road system and thus the limitation of car use in Manhattan. For this purpose, the legislation for road infrastructure needs to integrate design principles for the new system in an aim to assist towards the flood adaptive interventions.

Financial conditions

The integration of a holistic green – blue system into the urban core through the grid redefinition and block repurpose requires the alteration of the street profile, the creation of pocket parks in the existing parking spaces, the incorporation of green – blue public spaces, the demolition of selected buildings and the roofscape activation. The implementation of such a project would demand a significant amount of funding. However, the advantages offered by the high concentration of people and the overall development of the site as a node able to manage the excess of water caused by flood would benefit the economic growth of the area. It is believed that the potential disasters due to flood will be mitigated, while the attraction of diverse economic and cultural backgrounds will pay back the money used for the initial economic investment.

Political conditions

The project aims to foster the social inclusion through the interaction between all economic classes and ethnicities. In terms of politics, the most important condition for the implementation is the reverse of current capitalistic logic into a more socialistic system in Manhattan. Moreover, the integration of natural systems and the limitation of car use require the respect towards nature - environment, an action that it does not favor consumerism which is inextricably related to capitalism.

Societal conditions

The implementation of the project aims to bolster the social inclusion. In order to achieve this, the social justice is fundamental. The lack of social mix and diversity in Manhattan has resulted in social inequalities leading to segregation. In this sense, the social cohesion in terms of integration, accesss to opportunities and participation in urban life is crucial for the livability and diverse nature of the metropolitan area.

6. What are the limits of such a project and what is the impact on the local communities?

The integration of a green – blue system into the urban core creates certain limitations. More specifically, the incorporation of green corridors in the roads and the repurpose of the existing parking spaces as pocket parks pose restrictions on the currently extensive car use. The impact towards the flood resiliency is complementary since most of the projects in the area focus on the mitigation of flood vulnerability through the design of the island's edge. Taking into account the capacity to of the intervention to store significant amount of water during extreme rainfall events, it is clear that the impact of the project is of valuable assistance of the metropolitan area.

The benefits of the project in the local communities are quite significant. As previously noted, there is a lack of social mix with many distinctive neighborhoods in the metropolitan area. The design of a holistic system with green and blue public spaces aims to foster the inclusivity and the meaningful interaction between all economic classes and ethnicities. The limitation of car use will assist towards the resiliency of the communities, assuring safety and well - being. The system will serve as a node able to attract more and more people, thus contributing to the local economy.

The green and blue spaces will become a new social infrastructure that aims to bring people closer to nature and the forgotten Dutch palimpsest landscape.

7. What are the challenges the grid brings and what are its advantages?

- What is the meaning of the continuity of the street-network and the grid-cells/blocks?
- In what way the new lens of the grid differs from the original lens?

Manhattan grid has received both positive and negative criticism. The application of the gridiron plan assisted in the spatial organizational logic of the island in an aim to foster the fast building development. However, the grid distorted in a great extent the natural landscape of the region forming a compact building environment.

Taking into account the need for Flood Resiliency, Social Inclusion and Porosity the grid presents valuable opportunities in terms of intensification – densification as well as redefinition. The incorporation of a continuous green – blue system that can expand in a form of a green megastructure in the metropolitan area aims to assist towards the mitigation of flood vulnerability and bring people closer to nature. The grid is redefined through the incorporation of green – blue linear parks while the porosities inside the blocks are intensified in an aim to formulate inclusive public spaces. The flood resiliency of the grid affects the housing densification strategies since there is impending housing shortage. The incorporation of the green blue system in the already dense building environment of Manhattan, poses limitations on new housing densities inside the urban core. The internal part of the island will partially become a green – blue matrix while new housing densities will appear in the sea in the form of floating houses and in green islands as an urban expansion.

The holistic design approach of the street network in combination with the grid blocks as a continuous system is vital for the flood resiliency. The excess of rain water will run into a system forming canals and watersquares while the green network is beneficial for the local communities and the metropolitan area in terms of communal interaction and environmental resilience. What is important to keep from the project is that designing in systems through multi-scalar strategies assists towards the mitigation of complex challenges.

All in all, the project aims to offer a new lens of the grid system. The original grid constitutes a concrete road network with limited and disconnected green public space leading to a compact building environment. The grid system does not incorporate the water element as well. The new lens of the grid aims to integrate green and blue structures as well as inclusive public spaces in a holistic design system that contributes to Flood Resiliency, Social Inclusion and Porosity.



"The designation **terra firma** (firm, not changing; fixed and definite) gives way in favor of the shifting processes coursing through and across the urban field: **terra fluxus.**"

- James Corner, 2006

