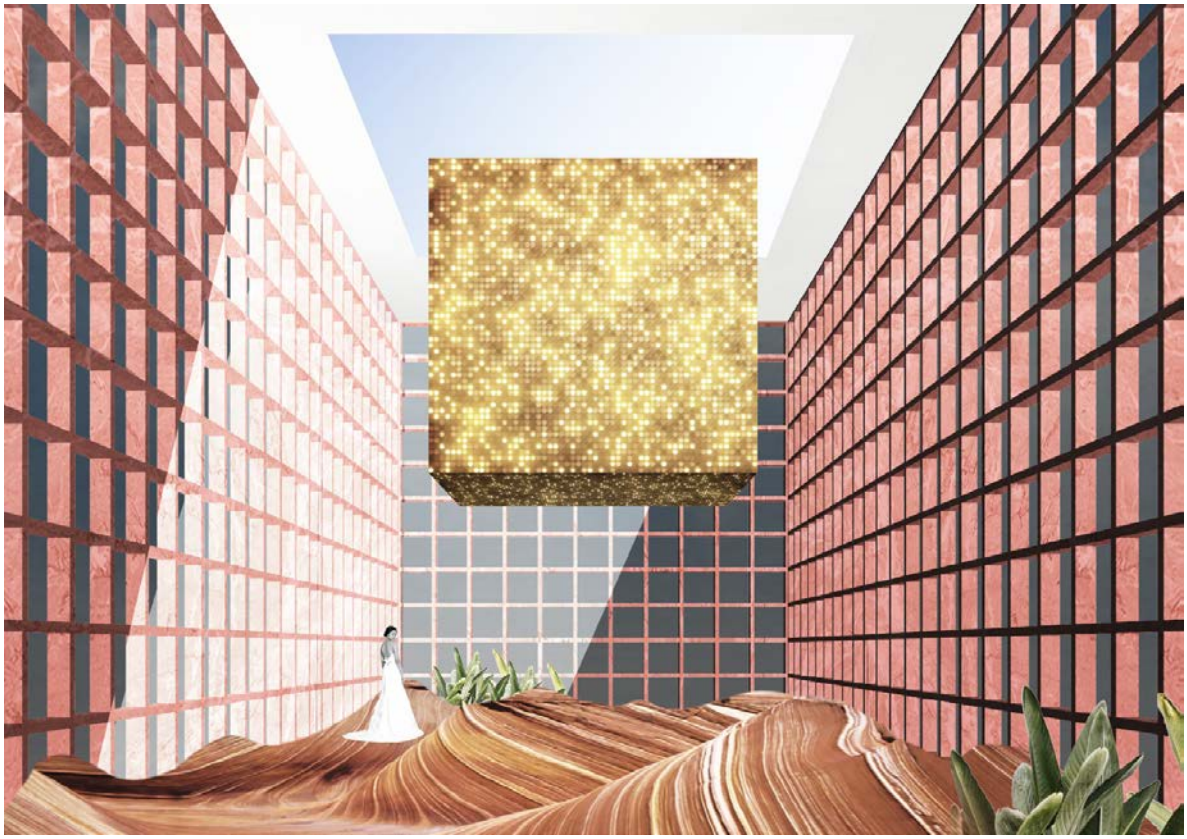
Thesis Reflection

Studio Topic: Midtown Change
Thesis Topic: Rediscover the undervalued subterranean territory



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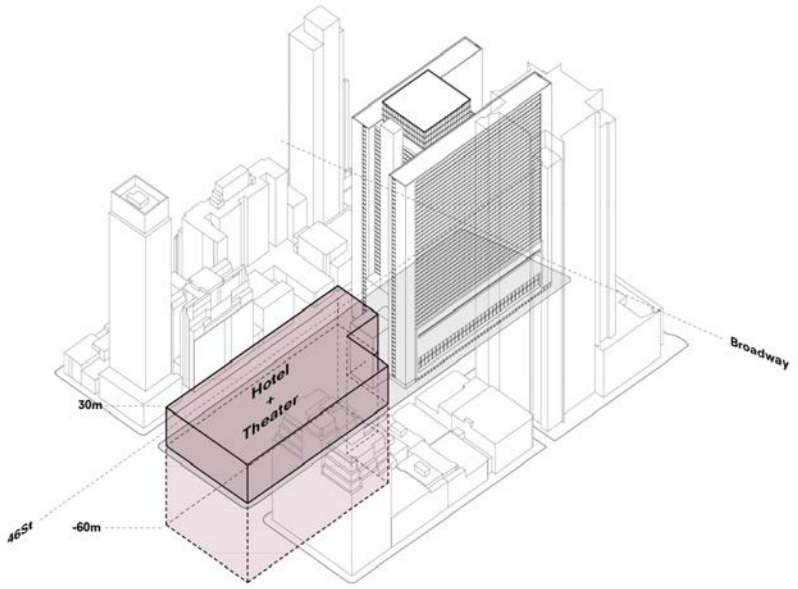
1. **Project Description**

Due to “air rights” trading according to the latest zoning regulations in New York, many plots sold their unbuilt height to their neighbor plots. This causes a phenomenon when there is urgency for redevelopment: the plots which sold their air rights cannot build higher than the existing. According to this, the contradiction between more demands for high density and limited buildable space in New York is being exaggerated even more. Triggered by this paradox, the research is trying to answer the question “how to sustain density and land value of the lots which sold their air rights?”. The project is based on the assumption that the future rezoning from the city would free out a new dimension of space by exploring the subterranean territory. Thus, the objective is, from above ground level, taking the opportunities of inserting a “low rise” and “low footprint” building in the most dense area in the world, while beneath the ground level, accommodating and performing like a “high rise“ and “high density” building.

The project is a 65,000 m2 theater and hotel complex, in which contains three main play stages, one hotel block and one hostel block. The project is located in one of the most dense areas in New York near Time Square, between 45st and 46 st, Broadway and 8th Ave. In this proposal, 2/3 of square meters are located underground. Because of this new typology of underground building, many design principles need to be reinvestigated. For example, the way to enter the building, the circulation, the climate and the structure.



2. **Relationship between research and design**

Research and design should not be divided, and they are a closed loop mechanism which gives feedbacks to each other and drive the development of a project. Research allows architects to find out evidence and position in a random and unfamiliar situation, while design interprets and test the research.

A critical way of thinking about different methods and reflect about the process of doing a systematic research is very important. In architecture education, I feel that we dive into our professionalism too early and trust our instincts too much. Sometimes we achieved graphically satisfied drawings without knowing why we choose this specific way of drawing and perspective, sometimes our instincts of composition and eager for perfect geometry blinded us from a systematic understanding of design approachThe methodological way of thinking helps me to choose what

tactics to use to research a phenomenon, how to compare and be critical about different approaches and how to deal with new issues by improving or combining different methods.

The research and design together is a heuristic approach. In architectural education and practice, we are pushed to produce new ideas and often ignore reinventing the existing. Creativity has been understood with bias which is denying history or context to produce new ideas. "Architect's problem is not how to fund his knowledge positively but how to make his knowledge grow."[1] We need to emphasize more the role of research and study of the existing material before we started to design. Also, research should be involved in all processes of the projects. The heuristic process enables us to deconstruct and analyze the knowledge, and because subjects are divided into very specific branches and form complex puzzles, it is necessary to have this generic perspective when facing new issues.

3. The relationship between graduation topic, the studio topic and the master architecture track?

Complex projects 2019 spring semester chose Midtown New York as the site area. Midtown is home to some of the NY's most iconic buildings, including the Empire State Building, the Chrysler Building. Still today, by being the largest business district in the world, Midtown remains the corporate center of Manhattan. Midtown is also known among the most expensive pieces of real estate. [2] However, recently Midtown is facing big changes that many buildings reaching their lifespans, offices moving out, huge scale real estate development happens outside Midtown. The studio topic is triggered by this change and tries to investigate where Midtown will be led to.

As mentioned in the project description, my thesis topic is exploring the undervalued subterranean territory in Midtown. This is part of the findings through investigating the relationship between super high value land and the city zoning regulations. The assumptions are that Midtown will still have demand to build more and be denser, while new way of regulating and occupying the land is needed.

In relation to Master of Architecture track, Complex Studio addresses a combination between technical problem-solving way of thinking and speculative way of research and design. This is an advantage when architecture faculty is located in technical university. The studio is always seeking for a change in a urban context. Basing on hard data, students are required to look into the context with a journalistic view through a specific lens. Even though the research conclusions do not require firm evidence, every step that you make decision should be logical and self-explained. The studio tries to address the research approach from social, economic, environmental aspects but also align with the practicality and technical background of the university.

4. Elaboration on research method and approach chosen by the student in relation to the graduation studio methodical line of inquiry, reflecting thereby upon the scientific relevance of the work.

My research is clearly more suitable as context led approach. According to Lucas, "allowing the context to take the lead in your research process is one way of establishing the primary importance of the physical, social or historical setting."[3] The methodology and theory is aimed to understand and analyze the context. The research is focused on Midtown change(context). The territory of context is defined by the whole group in studio, including real estate (zoning, housing

[1] Jorge Mejia Hernandez, Lecture Series Research Methods, TU Delft, 2019
[2] SYLLABUS 19 FALL SEMESTER, Delft University of Technology, Department of Architecture
[3] Lucas, R. *Research Methods for Architecture*, Laurence King Publishing, 2016

market, vacancy), character (people, business, tourism), mobility (accessibility, modes), public assembly (urban space, public amenities), environment (nature, threads). The context is framed and targeted in Midtown, which helps to explain why Midtown is unique and different from another comparable context.

The theories and literature are forms of evidence that help to argue or predict the change within the context. New York is never lacking theories, it is a test bed that everyone wants to execute experiments. In the early phase, since I am in charge of zoning research, my literature review includes two main parts: famous urban theories about Manhattan and official documents about zoning. Hugh Ferris, Rem Koolhaas, Harvey Corbett's theories are helpful to position myself in the past to imagine the future scenarios. The primary source for studying the urban rules are the zoning documents in different years, through which I am able to have a clear timeline for the development of New York city from a top-down view.

Methodology in my research plays a role of helping to analyze and understand the unique context. The first reaction for doing research in New York zoning for me is to handle with massive data. One of the methods that plays important role is mapping. Mapping helps a lot to locate information in geographical coordinates and this enables us to overlay and compare different information in the same base. Since zoning illustrate many formal rules by texts, visualizing data as a method is also crucial. In zoning code documents, translating the building envelope, incentive bonus to diagrams is more efficient way of communicating. Typological studies are also very important to understand the process of urban development in Midtown. By drawing different type and forms of buildings and categorizing them according to different time, the common patterns show clearly how the zoning influenced built environment in different time. During field trips we also visited local offices and interview locals in New York. In this way we were able to compare with the literature and get the latest primary resource in practice field.

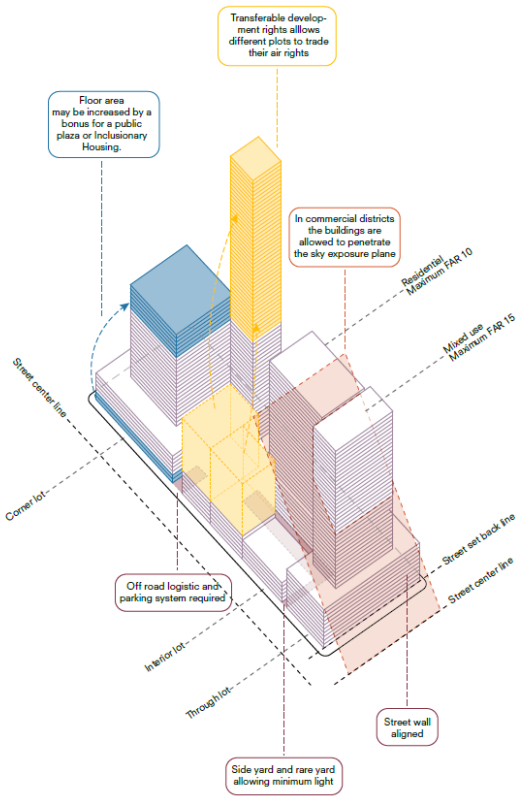
The perspective that I tackle the research is both etic and emic. As mentioned before, mapping, typological studies and literature review are from a etic perspective, while field trip, interview are from a emic angle. The combination between these two perspectives makes the research more complete with both objective data and sensitive touch.

Typological studies is also one of the main method. In history, Carl Linnaeus have made a plants typology table which explains well a systematic way of categorizing.[4] In his drawings, he had different principles to list plants in different drawings. One of the drawing is to categorize plants by the seeds form, another is defined by the shape of the leaves. According to Bernard Leupen, Harald Mooij, "A scientific classification is based on very specific characteristics; the different categories are, in principle, exclusive." The principle must be exclusive and gives a clear identity to a certain type. Also, depending on the purposes, objects can be categorized and defined by different principles. The goal of drawings is to compare and form a pattern. Through the pattern, it might show the evolution of a type along time or among different situations.

In my early research of zoning in New York, most of the theorists have the approach of typological research. Around early 20th century, Hugh Ferris is one of the pilot theorists of New York high rises and zoning laws. In his book The Metropolis of Tomorrow[5], he rendered a large amount of existing and imaginary towers for New York and described them with powerful texts. In his book the chapter is divided into three parts. First part is cities of today, second is projected trends and the last part is an imaginary metropolis. If translated, the chapters reflect Hugh Ferris scientific approach: studies of

[4] Carl Linnaeus, Swedish botanist, physician, and zoologist who formalised binomial nomenclature, the modern system of naming organisms.
[5] Hugh Furris, The Metropolis of Tommorow, Facsimile of a 1929 Edition, Dover Publications, 2015

existing type, categorizing and summarizing them with common rules, then imagine the future of New York typologically based on previous research.



5. Elaboration on the relationship between the graduation project and the wider social, professional and scientific framework, touching upon the transferability of the project results.

According to the book Form Follows Finance[6], New York is an example of how city can work out with pure obsession about financial benefits. New York is always the pioneer for metropolitan solutions, on the other hand, its extreme modernity also helped New York became confident of practicing radical urban and architecture ideas. However, the fabulosity of New York may blur the urgencies and anxieties the modernity and metropolis are facing. It is almost impossible to understand the whole context among humongous data in New York.

To discuss modernity as such a big topic, the unfinished book Arcades Projects by Walter Benjamin is a great example of investigating a part to uncover a whole. Through observing the architecture element, he managed to elaborate the complex impact of modernity, capitalism and globalization on our modern society. What we can learn from Benjamin's approach is that representing the whole by investigating particular elements through a specific scope.

New York miracle is based on its physical fantasy: delirious density of built environment. To investigate how New York realized its extreme urbanization miracle, learnt from Benjamin, I chose to look into this issue through a specific lens: New York zoning resolutions. The reason is that New York is well known as a man made artificial city, with unprecedent structured urban planning, but meanwhile, the urban planners work with financial driven strategies and give much space for negotiation and modification. This polarity seems to be a significant ingredient to contribute New

[6] Carol Willis, Form Follows Finance, illustrated, Princeton Architectural Press, 1995

York miracle, and perhaps through this scope, we are able to uncover the stories behind New York delirious density. Also according to Benjamin, time is an important element. Only with historical references can we understand what is happening now and what is new.

The economy growth of New York is constantly bigger and bigger, but as a closed system, the territory that is buildable is getting less. In fact, the city already started to explore subterranean territory already. During the Cold War, Oscar Newman, city planner and architect, developed a research called creating defensible space.[7] It is a theoretical project to answer the concern of security of living in Manhattan above ground. Oscar speculated on building this spherical city in Manhattan bedrock–a structure which have a volume of 5 km3 with its top beginning some 365m under Times Square. It is an impressive hole and it would make the world's largest man-made hole.

Japan was also looking for possibilities to build highrise underground. In 1930s, engineers in Japan published depth-scraper in Popular Mechanics.[8] The engineers were aiming to searching new ideas to overcome the frequent earthquake in Tokyo. According to the engineers, "interesting fact that tunnels and subterranean structures suffer less in seismic tremors than edifices on the surface of the ground, where the vibration is unchecked." In the event of an earthquake, the structure's components theoretically would "vibrate together, resisting any crushing strain."

During the visit to New York, Eran Chen, the founder of ODA architecture office, said "New York is a test bed, almost everything will work here." This optimism must have its reason behind it. Through the research above, we can almost assume that it is because the city put finance in a dominant position and the whole planning of the city follows it. Then the contradiction is that economy miracle must be reflected on a physical world conventionally, while Manhattan, as an island, has the maximum area that can be built. Meanwhile, zoning follows finance also creates issues like lack of liveability, shifting of metropolitan lifestyle, segregation, etc. The city should be concerned to not let what happened in 1900s happen again: the power of finance overtakes the physical built environment and the actual right to live in Manhattan is threatened.

6. ethical issues and dilemmas

This main ethical issues for this project or this studio is that we kind of accept "form follows money". In such a high capitalized city with such a high value of land, it is really difficult to address the different social groups. Anything that is transformed or newly built in Midtown will be much more expensive than other places. There might be a situation that doing nothing, or minimum will make Midtown more affordable for everyone. In this project, I took a position that if the private programme part can not cover all social groups, then at least to design a private owned public space as open as possible.

Underground territory development is also bit controversial. Cost of course is extremely high, this means more real estate or public investment. Construction safety is also an issue. Building climate underground is also not easy. Ventilation must be artificial, natural daylight is not efficient etc. However, some design decisions can help to compensate these drawbacks. For example, the added value of subterranean development is a more desired open space in such a crowd area in ground level. The structure needs less stability due to the earth. The building can be better climatized due to the protection of soil.

[7] Oscar Newman, Creating Defensible Space, Center for Urban Policy Research Rutgers University, 1996
[8] Popular Mechanics, 1931