

MSC 4 - REFLECTION REPORT

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Track: Architecture
Chair: Materialisation
Studio: 'Strategic Architectural Design Development' (SADD)
United Nations Environmental Council, New York

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External examiner: P.A.M. Kuitenbrouwer



1. Introduction

With this paper I will reflect on the relationship between the research and the final design. Further I will elaborate on the place of the design in the broader social context.

The design assignment

The assignment for the MSc Materialisation graduation studio (SADD) is to design the new United Nations Environmental Council in Manhattan. This council will be the needed new center for sustainability in the world and has as a task to deal with sustainability problems like waste, energy and biodiversity on a global level. The program of demands asks for an “icon of sustainability” on the plot of the United Nations Headquarters.

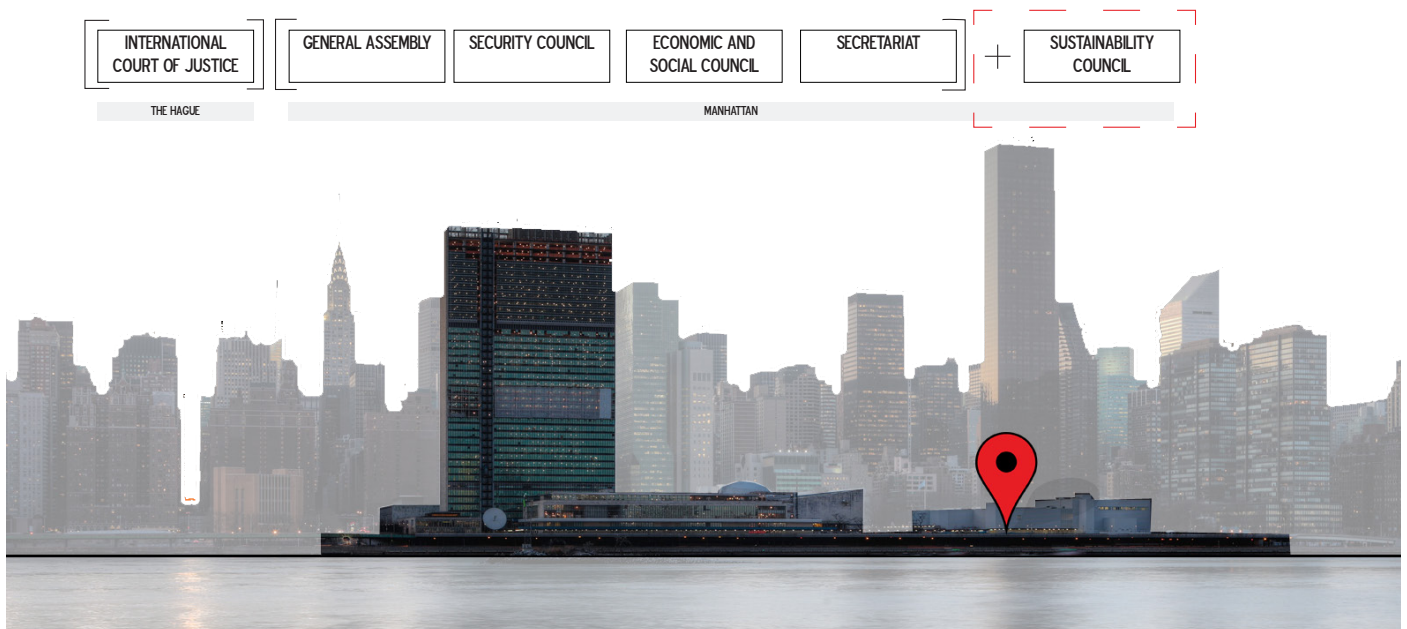
The philosophy of the studio

“The making of any architectural work starts with an idea. However, between the first notions and the final work lies an ocean of possibilities and choices.

Design Development is about recognizing those possibilities and making the right choices, using the right tools and input, at the right moment, on a proper scale. As such, the design develops energetically and smoothly, and the work acquires a clear, mature coherence and expression.

The chair of Materialisation emphasizes the importance of the craft to develop ideas from paper to material reality.” (SADD reader 2012/2013)

Many factors can steer the design process: design tools being used (research, models, drawings, sketches, calculations etc.), but also input from different people (advisors, clients, users and builders). The specific aim of the Strategic Architectural Design Development Studio is to teach students to choose the right design input at the right moment in the process. Problems and tasks are converted into inspiration and benefits. This will ultimately result in a clear, logical and coherent expression of the design. At the end of the studio a full design that is functional and buildable, is expected.



2. Relation between the project and the wider social context

“Sustainable developments and measurements are being taken all over the world, in all sorts and kinds. Still many steps need to be taken and conflicting interests need to be solved, but the awareness and care for our environment has never been in better shape than today. This is a very promising and challenging development that would only work much more efficient and effective, if it were coordinated worldwide. The UN Headquarters of Sustainability, or UN Environmental Council, will be the home-base for this worldwide coordination of sustainable measurements.” (SADD reader 2012/2013)

The task of the UNEC will be to solve worldwide problems on the topics like waste, energy and biodiversity. It will form the heart of a worldwide organization for sustainability. The new home of the UNEC should reflect these aims and practices in its materialization. But would it not be ironic to build a new building for an organization of sustainability of this importance, while building is in fact a very unsustainable thing to do?

Right now the building industry is one of the most polluting industries. Buildings account for large parts of our landfill waste, our greenhouse gas emission and use almost half of our total energy consumption. If we would put such a polluting object in the already crowded and polluted Manhattan to represent the Environmental Council, then how the UNEC could be taken seriously?

In general, it is therefore of big importance that we change the way we build in order to genuinely minimizing environmental impact. With smart design we can do this, and architects will have to fulfill an important role in that.

Research question and goal

My goal for this graduation was to see if it is possible to turn building from an unsustainable act into a sustainable one. With the UNEC I saw the opportunity to create a building that is meaningful from micro to macro scale. I wanted to create a building that helps and even improves our environment instead of damaging it further.

The research on the scale of Manhattan became the first important input. The building picks up on problems and unsustainability's that were found during the first analysis and incorporates solutions for those with the provided brief and program.

Problem Statement: Manhattan runs on unsustainable sources and systems, which will cause major problems for the city in the future.

Research Question: How can the architecture of the new UNEC help to improve its old and unsustainable surroundings?

3. Method of approach & relationship between research and design

The research done in the studio has been twofold. The first semester focused on a general research of Manhattan, resulting in a booklet and a master- and site plan. This research has been performed within a group of 15 people, in which each had their own topic to research (History, Population, Mobility, Pollution, Energy etc.) My task in this was to do the lay-out of the booklet and master plan and coordinate the research into to a coherent story. The booklet presented the problems on each topic, but also a set of tools and suggestions to improve the situation and an overview of the relation of each topic to another.

The second semester was dominated by the elaboration of the individual designs on the scale of the building. From the problems and solutions found in the general research I derived 7 necessities for creating a building that would help improve the unsustainability's of Manhattan. On each of the 7 points I performed a more elaborated research.

1. Create an icon (What is an icon and can it be made?)
2. Reuse of existing structures (What are the qualities and the weaknesses of the current FDR drive?)
3. Collect and use rainwater (How much water is needed and how can it be collected and stored?)
4. Do not use any unsustainable energy (Which methods of sustainable energy production are possible on the location and which would be most suitable?)
5. Create a public park (What kind of park would be the most suitable here? What could people do and see?)
6. Focus on the new boulevard (How can the UNEC benefit from the new transportation system and the new sustainable developments around the boulevard?)
7. Connection of the city and the boulevard (How can a connection between the city and the waterfront be created through the secured plot of the United Nations?)

Next to that also a fitting relationship with the existing UN ensemble, placement and appearance of the building (where, how big, what shape) was discovered trough making several small models, but also the dissection and organization of the program (which functions are there and how should they be organized) was researched.

The outcomes of these individual researches where again filtered and combined in order to create a coherent design that fulfilled the brief.

Design proposal

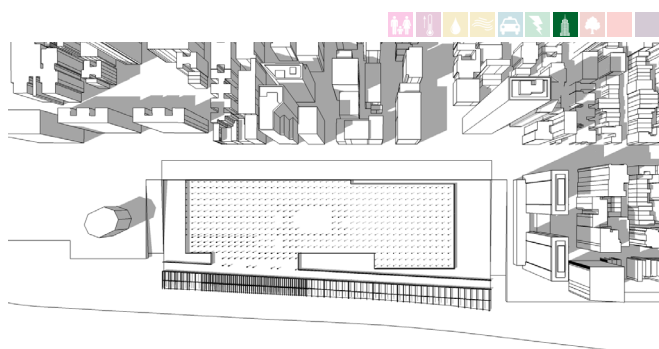
The design consists of three main elements with different functions: an office strip with a private character, a public part engaged with the city and a representational conference space. The different characters of the program are linked to the different characteristics of the environment and characteristics of the plot.

The design is mostly placed underground. This has 3 big benefits: First it reuses the existing structures of the old FDR Drive and the temporary building (point 2), which reduces the need for demolition and rebuilding. Second, the thick green roof and the enclosure in the ground will help to save energy for heating and cooling (point 4). Third, because the building is placed underground, a large space remains free to create finally the initially beautiful monumental public UN Park with a large water area for rainwater collection and storage. (point 3 and 5).

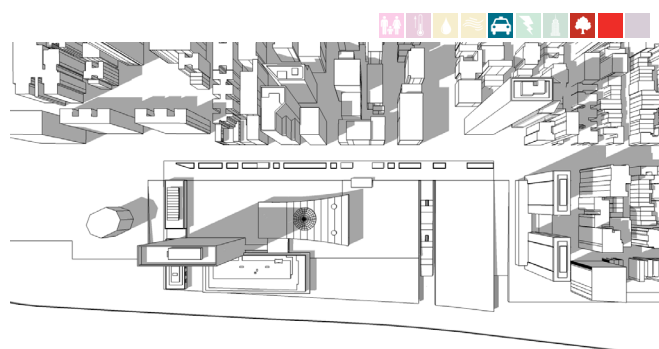
The old FDR drive is a long and narrow space, suitable to house the more flexible office functions. The bigger column grid that the temporary building leaves behind is stronger and more suitable for the visitor-spaces like the auditoria and exposition hall. A public routing from the city to the boulevard (point 7) cuts through the public part of the building and provides daylight and air, while at the same time uses the opportunity to involve the passing pedestrian in its tasks of a more sustainable world (point 6).

Even though there is already a general assembly in the original buildings of the UN, the program of the UNEC demands to have its own conference hall to “make a statement”. This space, where leaders from over the world come together, is the eye catcher and the representational visual aspect of the UNEC to the world. It stands on a monumental location at the end of the public route and makes the UN plot visible from the new sustainable boulevard (point 6) Its shape and placing makes the UNEC a modest but present complement with the older UN ensemble (point 1).

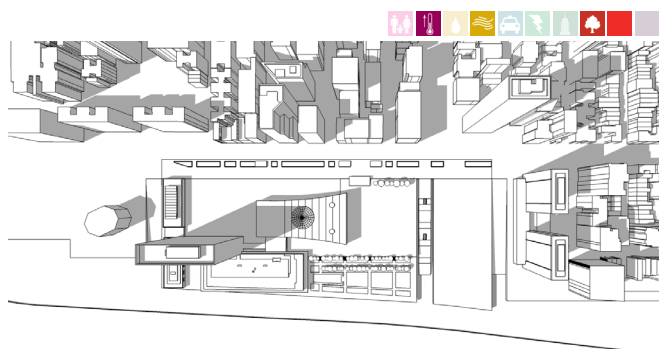
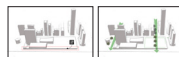
The icon further houses two different climates, one warm and one cold. They symbolize the climates in the world and the balance of energy that we need to restore and maintain. The two climates help to maintain the indoor climate, by collecting and storing heat and cold and distributing it through the building whenever necessary (point 1 and 4).



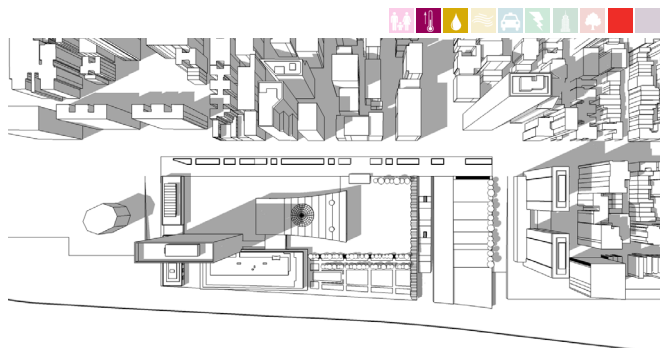
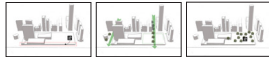
REUSE EXISTING SPACE



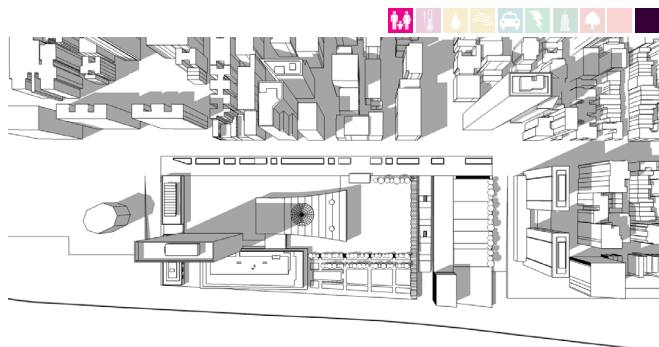
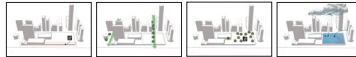
CONNECT THE CITY WITH THE BOULEVARD & U.N. WITH THE CITY



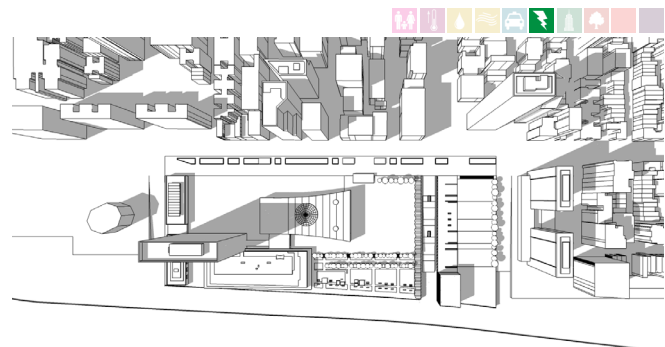
BRING EXTRA GREEN IN THE CITY BY (RE)CREATING A FORMAL U.N. PARK



CREATE MORE OPEN SPACE IN THE CITY BY COMBINING RAINWATER STORAGE WITH A PUBLIC SQUARE



A TALLER VOLUME MAKES THE U.N.E.C. STAND OUT FROM THE PLATEAU



THE BUILDING SHOULD NOT USE UNSUSTAINABLE ENERGY SOURCES



4. Conclusion

By performing an extensive research about the environment a large pool of information was created. From this pool I selected 7 main focus points, on which I elaborated again.

The reason I had 7 points was because in the general research about Manhattan, instead of doing research on only one topic, I was responsible for many. During the process I quickly found out that large amount of points tended to make the assignment even more complex. Already the program alone provided complexity, with the different functions and security issues and the relation with the current UN complex.

By strategically using parts of the general and my individual research in the design process, the building emerged. Within the process I continuously tested my design according to the 7 points, to make sure these goals would not get in the way of each other, but could rather enhance and inspire each other.