PERSONAL

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STUDIO

theme: United Nations Environmental Council
teachers: Kees Kaan, Henri van Bennekom & Maarten Meijs
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studio choice: Learn to design in a sustainable way as preparation for the future as architect

TITLE

INTRODUCTION

The studio of Materialisation offers a Strategic Architectural Design Development (SADD) project for the United Nations in New York. In this course the student is asked to design a United Nations Environmental Council (UNEC) as an extension of the current U.N. composition, which contains The General Assembly, The Secretariat Building and a library. The assignment is to create a convenient work environment where important decisions will be made about our environment.

“The U.N. Environmental Council: More than ever, the world needs to be taken care of. The UNEC will operate as communicative organism for the whole world in the field of sustainability and environment.


In this reflection paper you will find a brief overview about my design process during the SADD Materialisation studio.
RELATIONSHIP BETWEEN RESEARCH AND DESIGN

The concept was throughout the whole design process the guiding red line to come to the final UNEC design. I tried to involve the idea behind the building in every design step, from the urban scale up to the details at a scale of 1:5. The research for the masterplan was based on several topics like: energy, pollution, public space, vacancy, travel time, urban heat island effect and safety. As a group we tried to address all these topics in the masterplan, but the ones that have the most effect on the final masterplan design where travel time, public space and safety. By lowering down the FDR drive (highway underneath the design location) the safety during a General Assembly once a year can be much more guaranteed. But it is also a positive interference for the employees and public visitors of the United Nations compound. Furthermore I tried to find a balance between security and accessibility of the plot. Avoid long waiting rows and value reducing security tents which now determine the view on the United Nations. The sustainable answer for this lays in the re-use of the basement of the General Assembly building. Part of this underground parking space becomes available because the masterplan offers also the opportunity to access the United Nations in a new way. Due to the reduction of travel time by the introduction of a public transport hub system, the car use around the United Nations plot will become less. This available underground space will be used as the new entrance for the UNEC and UNGA.

The top of the lowered FDR drive will be used a boulevard which connects north and south Manhattan with each other. This is also a debouchment of the veins which we upgraded to better connections between Midtown Manhattan and the East River.
"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". (Source: SADD reader)

The UNEC design itself has some smart features to work as a communicative organism and being the example for building in a sustainable way. First of all is the façade of the building is a light weight concrete skin which is able to absorb the solar energy from the sun and store this heat in the former space of the FDR drive. This is a perfect location for water tanks (in which the heat can be stored), because the soil quality of Manhattan (rock) doesn’t give the opportunity for aquifers. In winter this heat will be brought in the building and in the summer the concrete structure will cool the building with concrete core activation. Furthermore are the greatest energy consumers of the program (auditoria and council) located in the ground, so the energy demand for cooling will be lower. The building has an own water storage system for flushing toilets, fire water and spraying all the new green of the masterplan. It has also an open building structure by which sunlight can penetrate (in combination with solar controlled glazing) into the different spaces of the design and will reduce the use of artificial light and so the energy costs.

These features will help to make the building become sustainable and contribute to the masterplan design. During the design process it becomes more and more clear how sustainability and design can be combined in an architectonical way. The placement of functions inside the building, but also the accommodation of the building itself, the ratio between open and closed façade and material choice contribute all to a sustainable design.

Summary of sustainable aspects:
- solar collective façade;
- greatest energy consumers are located in the ground (lower cooling demand);
- open building structure will provide a lot of daylight (lower energy demand);
- sustainable floor system (reduction of concrete);
- own water storage system for collected solar energy;
- re-use of the FDR drive and basement.
The methodical line of approach of the studio is based on the fact that every discipline of a design process can already start at the first idea behind a building. By integrating aspects like for instance construction and installation already in a very early stage, designs become very smart and can save a lot of unnecessary costs. These disciplines do not only affect each other, but also make you see the bigger picture as an architect and be able to maintain the overview. It helped me a lot to not only focus on the making architecture, but also think in an early stage about the earlier described aspects. For instance the construction was from the beginning very clear, by making a distinction between the several functions helped me to come up with two types of building structures. Column structure on grid (office) and radial structure with load bearing walls and frame works (council and auditoria).

It was continues design process which switched constantly between scales and by using the concept of the building as a guiding line it helped me to maintain the overview. During these switches I also had the opportunity to do research on several reference projects in different scales ranging from façade, construction and climate aspects.
The relevance of this assessment is fictional, but can be considered as real for the future. Due to the fact that our planet earth needs a communicative ‘organism’ (UNEC) to avoid disasters like flooding, deforestation, air pollution etc. But on a smaller scale the UNEC will also be able to coordinate regulations regarding for instance sustainable building. The UNEC will, on one hand, collect and on the other hand exchange information with the world. By making this design I tried to give the world a ‘new view on the world’, a new way to go in to the field sustainability and the quality of our planet earth by designing a ‘framework’ through which our globe will be recognizable. Every time the UNEC will be seen on television, this becomes the trademark. It will work as a sign, which was already described in my position paper during the lecture series (AR3A160).

So to sum up I learned a lot about sustainability and the coordination of a design process. This where exactly the aspects that I want to study. The choice for the materialization studio was a smart one, I think that refers to the practical world due to the fact that it treats every aspect of a design process to come to an all-round design. But on the other hand I think that the scope of this project is not very realistic, because in normal circumstances designs like this will be developed in a team of architects and spread out of a period of years. This is even apart from the fact that we currently have to deal with financial crisis and projects like this are often postponed or even canceled.

But I sure enjoyed my graduation year and a learned a lot!
SOME IMPRESSIONS OF THE BUILDING

Waterfront elevation, UNEC a new view on the world.

The inside of the council.

The council from above