Reflection paper - United Nations Environmental Council,
Manhattan, New York

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Theme: New authority on Environmental health
Title: The fluid network; United Nations Environmental Council
Version: 15-05-2013
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Introduction

For the studio of Strategic Architectural Design Development (SADD) of the Materialisation chair; the United Nations Environmental Council needs to address the problems of the environment in the world. Give it the attention that it deserves and function as the coordinating organisation to solve these world problem of energy, waste and biodiversity. This architectural icon of sustainability will represent the necessity for sustainable environments in the essence of the design (01).

The design area is within the United nations territories in Manhattan. The different connections of the UN plot within the grid of the city are important even as the connection to the East River.

The relationship between research and design

Sustainability
The meaning of sustainability is not an universal agreed definition, there are many different views and meanings, of how sustainability can be achieved. The definition is adjusted and changed during time. The provided main meaning of the word sustainability is “maintain”, “support” or “endure”(02).

Since the fuel crisis of the 80’s the word sustainability has been more used for our environment. During the meeting of the General Assembly of 1987; the definition of sustainable development was;

“sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”(03)

Since the first definition of 1987; there have been many variations and extensions. As in the sense of sustainable development, sustainable, sustainability, sustainable future, sustainable society. All these terms address different groups or solutions.

In architecture; sustainability is often hard to understand with numerous issues and uncertainties. Mostly sustainability is brought into the design in a later part of design development. There are also “green architecture” were the sustainability is the main design purpose that often leads to a unattractive architecture. There are also ratings for sustainability that define green in architecture as LEED and BREEAM. Some of the architectural projects are not possible to validate by these rating systems, the standard calculations of old systems that are certified can only be used. In other scenario’s the sustainability systems will be replaced to succeed the label, by replacing the original systems by less appealing ones.

The designed building gives a feel of sustainability through the use of the water and the environment. The building purifies grey water, hence the research of the building looked at the advantage of the use grey water in the building and re-use advantages.

The relation between the theme of the studio and the subject

The theme of the graduation; strategic architectural design development of SADD from the chair of materialisation is the aspect of strategically developing different design elements simultaneously. The process used should be researched thorough different aspects and not directly be implemented. By using this process we get a much broader design.

There is an important relation between the studio and the subject of the United Nations Environmental Council, the scale of the project and the wider impact this project as an example it can be. These multiple scale levels ranging from the urban context and even wider scope and to the smallest building detail. It is important to take these different scales in mind and to switch between them during the design process. It is an important part of the of strategic architectural design development. This can be complex sometimes but it is important and it can benefit the design eventually.
The relationship between the methodical line of approach of the studio and the method chosen by the student in his framework

During my design process the SADD method of working ensured that a very large number of different aspects were investigated and developed. The method used during the process, is a combination of analysis of what is available and several case studies of similar references. This input may be used during the feedback process of the design that can be found during validation. The methodology for the design process will mainly comprise of the research by design method (Fig. 1). This method combines the design and research in an optimal way, there will be a continuous connection between those two main aspects. The various feedback mechanisms ensure a proper way of decision making is used. The graduation model shows the total study process, from the first preliminary research till the final design. The different aspects of the design process are also displayed. This process is from larger scale to detail, between that there is always a validation and an implementation of the different information and decisions.

The relationship between the project and the wider social context

Urban interventions
It is important from a social context that the building incorporates the urban surroundings. Hence I design the headquarters, in a way that it communicates sustainability worldwide and will be intervened in an urban dense area that will be absorbed in the existing terrain and buildings. Therefore it is important for my designing process to analyse the large scale; this is for example how the urban environment works; the current situation of the United Nations with its buildings and surrounding, these facts will be used in the design. The surrounding and the context of the new design has different aspects of time in where it operates. How it used to operate, how it operates now, and the future. This will be researched trough perception, and trying to understand the human activities. Through the urban analysis these operations are seen and understood. From this point of view the new design is broad into this operation for the urban situation. During designing the new building we have to look at the past (previous designs and architectural visions), the current and the future, so it can operate together with the context in these aspects of time. The new design brings also an addition to the current context. This is seen as the vision of the architect, that can bring change to the context in a positive way. The design will not only be designed within typology, these study of types can only succeed if there is an understanding in the previous design, and the approach needs to be universal to the past the present and the future on any location in the world.

For my personal design, there is a start with understanding the current context, through the use of perceptual and spatial practise of my own vision and the vision of the users. If there is an understanding, there is a starting point to use the more technical part, the plans of previous master plans, or buildings and more technical drawings. From this it is important to see in references if it is an optimal use of the design.
How can the new headquarters be absorbed in the terrain and the urban area in a sustainable way?

The new graduation project will be a demonstration of how new sustainable buildings can be integrated in an urban environment. The UNEC building should form a dialogue with the existing landscape of several layers, which are connected to the current context of the United Nations in Manhattan that brings a new identity for sustainability. The building itself should be sustainable but also the ground that is standing on. The landscape around the building can also be used to create an even more sustainable building. The new building is an authority for sustainability, this should not be an exposition of sustainable solutions, nor be a collection of green interior spaces and green building skin. The sustainability should be visible from the outside moreover it should be integrated in the building as a bioclimatic design.

Another relationship between the project and the wider social context is the integration of security. The building will be situated in the existing compound and one of the current issues is security. This issue arises because of the existence of the Franklin D. Roosevelt East River Drive this road runs underneath the deck and under the conference building, this situation can form a terrorist attack risk. With the projects implementations this risk should be diminished. Because of the current situation with the fenced complex, the complex oozes inaccessibility and a closed feel. So there are no real connections with the city because of those characteristics. The new UNEC building should create a better connection with the rest of the city, by being more accessible to the public. So people can roam freely after being checked at the integrated clear security line.

Conclusion

The UNEC building should be an architectural icon of sustainability. This icon is created by using the unused space of the plot as a green natural landscape. The new building should first address the opportunities that are on the plot and the larger scale of Manhattan.

Manhattan is one of the most dense areas of New York and has a big economic importance. “At the moment 55% of the world citizens are already living in urban environments. In 2050 this amount will rise even more. Predictions saying that it will rise up to 70% (6.4 billion people). In Europe and North America already 80% of the people are living in the city and this percentage will even rise to 88% according to predictions in 2050. There are 450 cities with over 1 million citizens (20 over 10 millions)” (04).

In comparison the citizens in urban areas with a high density are having more environmental and health issues that need to be addressed then rural areas, this will be a good starting point for the new United Nations Environmental Council. Inside the area of the United Nations this should be one of the most important public buildings. The design task is that the building should be an energy zero building or even better so it can generate more energy than it uses. This task should be addressed in the architectural representation of the building and its features.

Some of the issues in an urban environment are; urban heat island effect, polluted rain water in city, water, demand of fresh water, insufficient capacity drainage systems, non-renewable energy system. In the new master plan there will be an energy grid introduced together with a water purification system. Also there will be a water storage system introduced with a storm water basin. In my personal design the UNEC will operate as a fluid network. This fluid network will be used as a filter for the city. The building will operate as the main operator in this fluid network that is connected to the master plan.

The climate of Manhattan can be described as cold winters with wind patterns that blows mostly offshore. The average coldest temperature is 0.1 °C. Spring and autumn are usually mild with low humidity. Summers are typically hot and humid. The average temperature is 24.7 °C. In night time the temperatures would raise through the urban heat island effect. “(...) The night time temperatures are raising between 13 and 15 degrees Celsius in comparison to what they would be without the effect” (05).

The building should address first the main aspects of this local climate and reflect this to the world. The climate issues of Manhattan will be solved through the façade. The building will partly use the former basement of the plot, this will save energy and create an large buffer.

The UN plot is one of the few left with an open green space that has a visual connection to the waterfront.
Green spaces could reduce the air temperature in the summer by evaporation, the vegetation is “(...) capable of absorbing almost 50% of the incident solar radiation. The World Health Organization (WHO) recommends a minimum of 12m2/inhab of arboreous zone.” (06).

This plot has a good opportunity to use the open space for sustainability purposes and possibilities to include the building in this goal. The open space will be used as a park that filters the water of the city. Some of my design goals are making use of the current landscape, the design won’t be high rise like the buildings in the surrounding area. By integrating in the platform, the design will be more sustainable and it will be a part of the current United Nations plot. The area around the architectural icons is important and should be maintained, the approach to the General Assembly is important.

An overview of my methods are firstly Phenomenology together with Praxeology, then if there is a clear understanding, I will use Typology of the designs that are important for my own design scope. And at the end to control this all there is a need for references of Typology. This process has to do with the technical background, with my previous studies.

In the future the urban environment will be having the most important environment and health issues. The new council will have to address the public the most. Together with the other councils, there will be a new start for a new world.

Literature and references
References:
03 - The Brundtland commission [1987] during General Assembly
04 - Toppeta, D. (2010), p. 3)
05 – Stuart Gaffin et al. 2012
06 - O.D. Corbella et al. 2008

Books:
Aalbert, K., K. Duijvestein en M. van der Wagl [2001]; DCBA-kwartet Duurzaam Bouwen; Boxtel,
Capelli, L.[2006] ; Self-sufficient housing : 1st advanced architecture contest; Barcelona
Duijvestein, K et. all. [2012] Uitgangspunten & strategieën voor een duurzaam ontwerp -Techne Press
Guallart, V. [2010] Self-sufficient City: Envisioning the Habitat of the Future - ACTAR
Jodidio, P [2009] - Green architecture now - Taschen GmbH
Kristinsson, J.[2002] - Integraal ontwerpen voor vitale architectuur – Aeneas
Moet, D. [2005] - Autarkie zelfvoorzienende woonwerklandschappen - Thoth
Pollio, M. Vitruvius. [1914-1960]. The ten books on architecture - Dover publications.
Thorpe, A. [2009]. The designer’s atlas of sustainability - Island press.

Articles: