

Scientific justification MSC 4: SADD

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Assignment

Climate changes are becoming more visible in the weather and natural disasters in the world. The war in the middle east and North Africa made us realize again how dependable we are from countries with oil reserves. These factors created the need to change our ways how we live and use energy.

The United Nations organization has various institutions which pursue different agendas and goals, institutions like the World Food Program and the Security Council. In order to pursue the agenda of the United Nations in the field of climate changes the UN has founded an extra Council. This council is named the United Nations Environmental Council (UNEC). The main goal of this council is a sustainable world, this is a world in which the energy and waste problems are fixed and the biodiversity is secured.

The UNEC organization needs a building which enhances the goals of the council. In this light the building needs to be at least self-sufficient in its energy use. The facilities in the building can inform people about the newest sustainable technologies, this can be done by the library and the exposition space. The building itself can stimulate builders and architects to choose for more sustainable solutions.

Although the goals of the UNEC are important for a better world in the future, the hard reality of the present world with the worldwide tension and fear for terrorist attacks ensures the need for a high level of security.

Design development

In an early stage of the design, we made some concept drawing about the façade and the entrance hall. These drawings were important in the process because they started the (design) thoughts about the façade and entrance hall much sooner than in other projects.

The function of the building; a conference building was new for the typology of building for me. The high amount of people which would be walking through the building is also a factor to be taken into account. In order to find solutions for various problems in the building I analysed the United Nations Headquarters Conference Building.

Urban plan description

The location of the project is on the East River side in Manhattan, New York. The project area is in the same area as the existing United Nations Headquarters. The building is part of a new urban plan for the east waterfront. In this new urban plan piers are (re)introduced to the east side of Manhattan, these piers are a common sight in New York.

Another important change in the urban masterplan is the displacement of the Frank D Roosevelt drive (FDR drive), this is a highway with some parts of it under the United Nations building. The places where the highway is crossing the United Nations area is a major security threat. When these days an international meeting is held in the UN building the FDR drive is closed, this creates major traffic problems.

In order to solve these problems the Frank D Roosevelt (FDR drive) will be moved off the waterfront to a tunnel in the east river, on top of the tunnel a park will be created. This park is on a safe distance of the UN buildings, and it is impossible to enter the UN compound from the park.

Building description

The character of the spaces in the program of requirements can be divided into two main typologies, office space and meeting space. The office space is only accessible by people which work in UN organization or if they are a representative of a country. The meeting spaces are more public and can be subdivided into three zones. The public zone, the conference zone and the council zone.

As stated before the level of security is very high in the building, everyone entering the building needs to pass the security check. In the building there are three different security zones. The public zone is close to the entrance. This area is accessible for everyone, visitors can gather information in the library, read books, access a computer or study in the quiet reading rooms and drink coffee in at the coffee corner. The pier introduced in the east river masterplan is accessible from the public zone, this pier is a place where people can relax in the sun or admire the sculpture garden.

The conference zone is only accessible with an entry card which can be obtained in the public zone at the card

distribution desk. The conference zone is the area where press conferences and presentations for/from businessmen or scientist can be held. These presentations take place in the various auditoriums in the building. The important aspect of the design should be the traffic areas around the auditorium, these spaces are not just traffic areas, these are the places where people can lounge and talk in comfortable chairs and couches. These areas can be classified as informal meeting rooms.

The council room is the most important space in the building, this is where all the official decisions are made, it is from the utmost importance that the decisions-makers are comfortable. This level of comfort can be obtained by the functions and facilities around the council room. For instance the council members should be able to get some fresh coffee in the short breaks between meetings and they should be able to drink that coffee in a comfortable chair.

The tower is an example for high buildings in the future. The tower could be considered an Energy tower. The tower is a combination of an office building with a natural ventilation energy concept, the tower will be very slim. The energy concept will use the chimney effect to refresh the air in the offices in the tower. The chimney effect occurs when air in the second skin gets warmer. The warm air will rise thereby creating airflow and pressure. The south façade is covered with PV cells, although these PV cells are not the solution for the climate problems, they give a good image to the building. The installations altogether with the heat pump which uses the east river to cool or heat the building, results in a building which uses no energy.

In the tower the emergency staircases, elevators and technical rooms will be located on the south side of the building, together with the energy concept and pv-cells on the south façade will create a utility zone. This will create an utility zone at the south side of the tower slab, thereby enabling a totally open floor plan on the north side. This open floor plan ensures maximal flexibility in use of the tower. The office will be full of natural light because the north façade is full of glass.