

# GRADUATION PLAN: MSc ARCHITECTURE | MATERIALISATION

Studio - '*Strategic Architectural Design Development*' (SADD)  
United Nations Environmental Council, New York

4076133 / O.C. Burlage

P2 \_ 20 June 2013

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AR3MA030 \_ SADD design studio  
Main Mentor: H.A. van Bennekom  
*Architecture*

The Faculty of Architecture, Urbanism and Building Sciences  
Delft University of Technology

***INTRODUCTION:*** This document elaborates on the intentions, ambitions, process, and evaluation of my graduation thesis/project within the larger social and scientific framework in the field of architecture. It can therefore be consulted as a directing document towards my graduation from the faculty of architecture Technical University in Delft, as expected in due of January 2014.

# 1. PERSONAL INFORMATION AND STUDIO DETAILS

## # Personal Information

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## # Studio

Theme: Strategic Architectural Design Development  
New UN Environmental Council, New York

Main mentor: H.A. van Bennekom  
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Products/aspects to be assessed: *overall assessment*

Second mentor:  
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Products/aspects to be assessed: *overall assessment*

External Examiner:  
Telephone number:  
Field of science:  
Products/aspects to be assessed: *overall assessment*

### Argumentation of choice for the studio:

Strategic architectural design development acts upon the designers-awareness within the architectural design process. As an extension of what Jaap Bakema once said, '*ontwerpen blijft echter mijns inziens toch voor een deel een wonderlijke zaak*'\*, the SADD studio tries to get a comprehensive understanding of the choices and opportunities that are presented to the designer during the design development, so that the right tools for design can be practiced. The twofold approach between the relation of the city and the architectural object, and the relation between the object and its materiality/details really appeals to me. I think that in order to achieve great architecture, the project should present a clear symbiosis between the different level of scale. It is therefore that I find the design phase of translating the architectural concept into a physical well though through clear building structure, materialized accordingly, most interesting.

## # Title

Title of the graduation project: 'Representing global boundary conditions'

\*Translation quote Jaap Bakema:  
'I believe that design is and will remain  
to be partly a wondrous thing.'

## 2. PRODUCT

### # Problem statement

Problem Statement:

*'PULL a spring, let it go, and it will snap back into shape. Pull it further and yet further and it will go on springing back until, quite suddenly, it won't. What was once a spring has become a useless piece of curly wire...'.<sup>1</sup>*

The quote above represents what may happen to the Earth if its systems are overstretched. *'... like those of an abused spring'*. The United Nations Environmental Program has developed directing guidelines and global standards in the way governments, companies and individuals should act in development direction which *'meets the needs of the present without compromising the ability of future generations to meet their own needs'*.<sup>2</sup> Since the establishment of the Brundtland commission in 1983, the issue of dealing with sustainable development increased significantly in complexity. ! Anno 2013, the United Nations environmental program is in need of its own representative council building that can act as a global recognizable icon in promoting environmental politics !

The United Nations headquarters complex is an provocation to Manhattan's generic structure. Over the years, it has been generally accepted and it is now a internationally renowned icon. The new UNEC building must respectfully join to its delicate composition, balancing on the complex relationship between the UN compound and the opposing genericness of the city of New York, while provoking a certain relevance in the world of its own.

Dealing with both the above described global- (*environmental politics*) and local-boundary conditions (*urban constrains*) the design should be an easily recognizable "iconic building" that evokes strong "impact" within its vertical context, embody social-relevance, accommodates its core value of propagating environmental awareness, and proposes an integrated approach towards sustainable building design.

Research Question:

The design question is therefore: **'How can architecture represent the essence of global environmental politics in such a way that is serves as an recognizable icon with a model sustainable character?'**

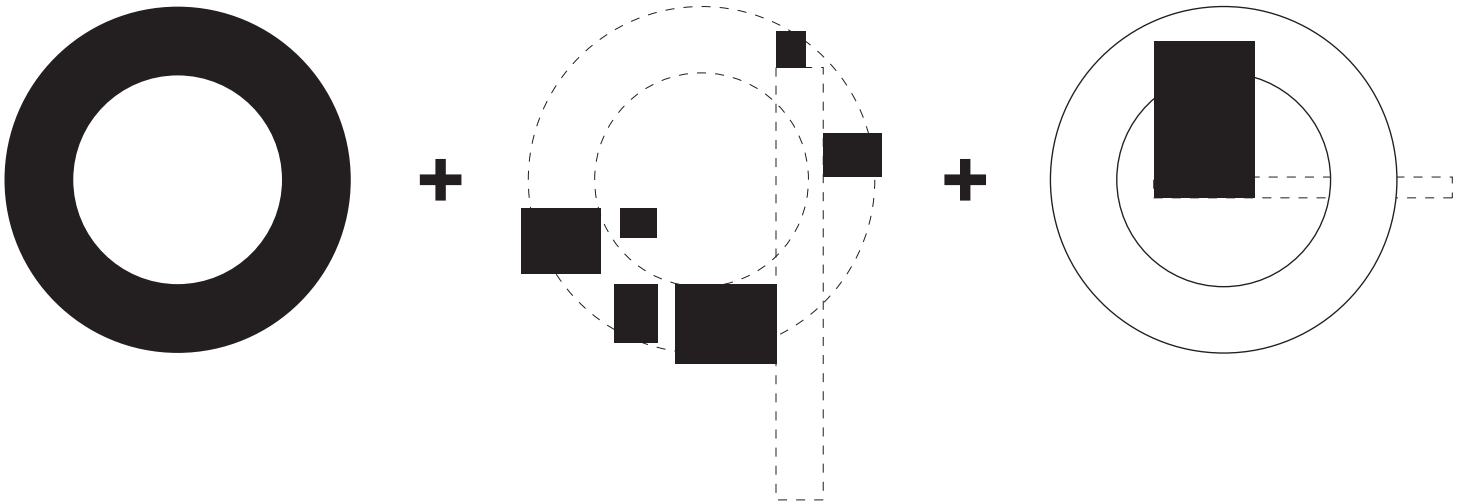
Design Assignment:

Design the ultimate architectural, sustainable building to house the UN Sustainability Council at the UN headquarters in NYC. The building should accommodate a vibrant business-centre while maintaining a clear (physical) relationship between the more private and restricted part of the program.

<sup>1</sup> Anonymous [2012] The global environment; boundary conditions. *The Economist* [online] Available at: <http://www.economist.com/node/21556897> [Accessed: March, 2013]

<sup>2</sup> Definition of sustainable development by the Brundtland Commission. Source: United Nations [1987] Report of the World Commission on Environment and Development: *Our Common Future* [online] Available at: <http://www.un-documents.net/wced-ocf.htm> [Accessed: March, 2013]

Keywords: *Recognizability, Representative, Urban relevance, Iconic qualities, Impact, Sustainability, Environmental awareness, ...*



I] Strengthening the relation between Midtown Manhattan and the East River Waterfront.  
credits: develop a valuable usable open space.

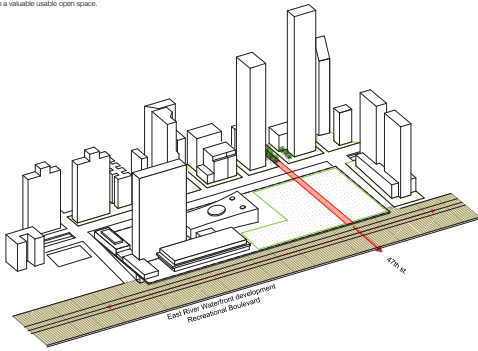


Fig.: 2.2-1

II] Act on local water management.  
credits: develop the LNEC as a vital link in a sustainable gray/black water circuit.

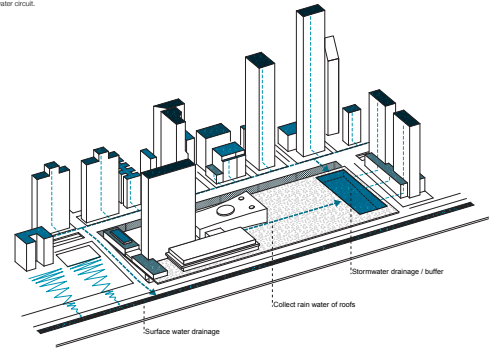


Fig.: 2.1

III] Act on environmental responsible building design.  
credits: relate the design to the local climate conditions.

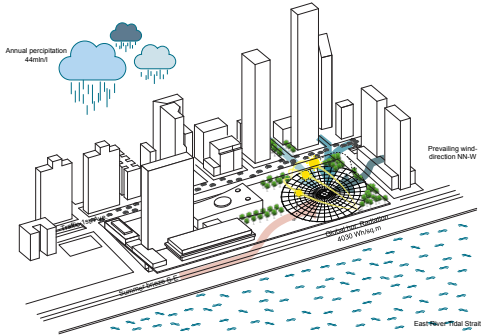


Fig.: 2.2-2

IV] Instigate smart energy use.  
credits: develop the LNEC as a vital link in a local energy grid.

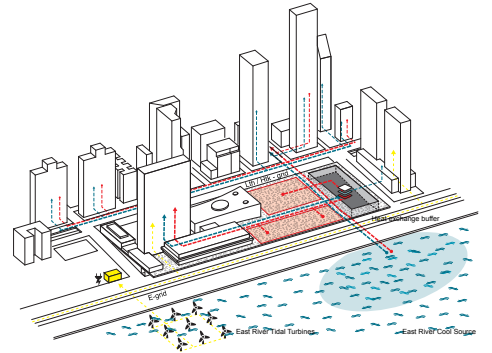


Fig.: 2.2-4

V] Act on the Urban Heat Island Effect.  
credits: improve the urban micro-climate and enhance the comfort of the immediate surroundings.

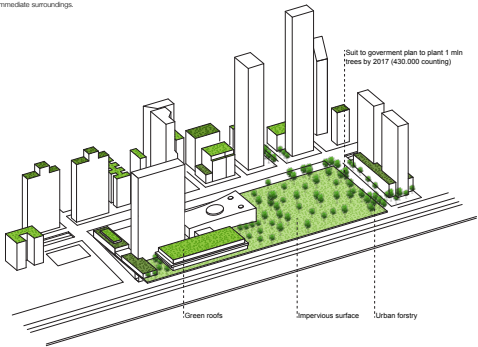


Fig.: 2.2-3

VI] Act smart and responsible on land use and local vacant space.  
credits: redevelop the UN platform.

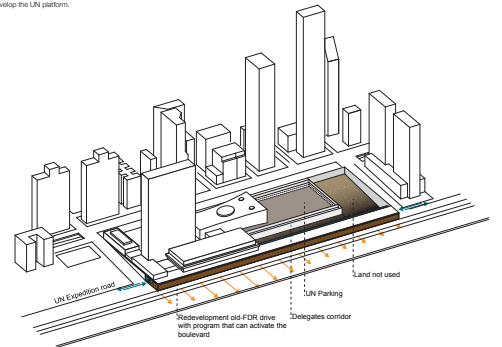


Fig.: 2.2-5

Fig.: 2.2-6

## 2. PRODUCT

Fig. 2.1

Parti of the building concept.

*credits: acting on the problem statement, the ambitions of the project translate into a threefold building concept.*

Fig. 2.2-1

Strengthening the relation between Midtown Manhattan and the East River Waterfront.

*credits: develop a valuable usable open space.*

Fig. 2.2-2

Act on environmental responsible building design.

*credits: relate the design to the local climate conditions.*

Fig. 2.2-3

Act on the Urban Heat Island Effect.

*credits: improve the cities micro-climate and enhance the comfort of the immediate surroundings.*

Fig. 2.2-4

Act on local water management.

*credits: develop the UNEC as a vital link in a sustainable grey/black water circuit.*

Fig. 2.2-5

Instigate smart energy use.

*credits: develop the UNEC as a vital link in a local energy grid.*

Fig. 2.2-6

Act smart and responsible on land use and local vacant space.

*credits: redevelop the UN platform.*

### # Goal (ambition)

The architecture of the new UNEC building has to have a respectful and considerate relation to existing UN-headquarter building, but stand out against the surrounding urban context. It should create spaces that excites the senses and which provokes lively interaction. Being the graduation project, the boundaries are pushed with distinct curiosity, as I always seek the qualitative best solution, both in conceptual, architectural and technical terms.

### Ambition

The project for the new United Nation Environmental Council should be unitary building design with a model sustainable character that embodies a formal architectural language and expresses the UN core-values of *'integrity, transparency and accountability'*<sup>3</sup>. At the same time the building should bring together UN secretariats, visitors, and global businessmen encouraging on the exchange of knowledge and ideas by provoking informal meetings about sustainable development, but at the same time maintaining a clear relationship between the communal, restricted and the private part of the program. By a smart and unique interpretation of the design brief, the building should seek to add new and positive qualities to the site.

### Key Considerations and Criteria

#### Impact

Being an internationally influential institution that encourages progressive change in the field of sustainability, the program demands a certain impact. Therefore the project must clearly define its position within the city, as well as the relation to its immediate surroundings. The project's complexity is seen as a positive creative force to create something unique for the site and its purpose.

#### Expression

The appearance should establish itself with respect to the UN-headquarters, while postulating relevance in relation to the generic 'monolith hybrids'<sup>4</sup> of Manhattan. It's architectural language is to be associated with authority and power, which endeavours 'clarity in form and logic in scale'<sup>5</sup>. Translating this formal language into a modern expression using new materials and state-of-the-art technologies is the architectural aim. The overall appearance should convey a message of transparency and expose environmental politics to the world.

#### A Sustainable Environmental Council

In its early stages of the process the design is fed by strategic climatic responsive guidelines regarding the site specific energy potential, the micro-climate, and local boundary conditions on the environment. In relation to the sun, thermal, air, orientation, and water, both passive and active strategies are defined that can translate into the building design. This comprehensive design attitude should translate into a comfortable building with a balanced energy demand.

#### Interpreting the studio Master plan

Derived from the preformed research in the studio, several key issues are defined which can substantiate the design development. [1] Strengthening the relation between Midtown Manhattan and the East River Waterfront. [2] Act on environmental responsible building design. [3] Act on the Urban Heat Island Effect. [4] Act on local water management. [5] Instigate smart energy use. [6] Act smart and responsible on land use and local vacant space.

**"Above all, the building must be a place with strong identity – a impressive, well-defined area in relation to Manhattan, i.e. the world, that can convey the importance of environmental politics".**

<sup>3</sup> United Nations [2013] United Nations Competencies for the Future [online] Available at: <http://www.unep.org/vacancies/PDF/competencies.pdf> [Accessed: May, 2013]

<sup>4</sup> Monolith hybrids defined by Joseph Fenton as; *the affirmation of a form and its envelope and the subsequent relegation of program to an inconspicuous appearance of the building*. In: Fenton, J.; [1985] Pamphlet Architecture; nr. 11.

<sup>5</sup> Kahn, L.I.; [1944] Monumentality. In: Avermaete, T.; et al. [2009] Architectural positions; *Architecture, Modernity and the public sphere* [Amsterdam] SUN Publishers.

### 3. PROCESS

#### # Method description

The method of analyses and design research can be delineated in an subjective and objective approach. Subjective being the data collection, analyses and interpretation in relation to the studio masterplan. Adding to the subjective research includes an individual literature about the city and the UN. To related this analyses with the design assignment, a more objective method of phenomenology analyses was juxtaposed to the studio research.

The methods that have been used to investigate on the site are: [1] *analysing a sequence image projection relating midtown Manhattan to the United Nations complex*; [2] *framing the facts of the urban context by making interrelated maps, diagrams, schemes as individual layers*; [3] *sketching visual perspectives from different strategic defined positions investigating on the individual perception of the UN within the urban landscape*. These methods were use in order to obtain 'designerly-knowledge' about the relation of the UN-complex to the surrounding urban context, and proofed useful in the way as the general conclusion provided specific starting points for the architectural design.

In the Msc 4 period, the research will turn to the scale of the building. The relation between the proposed building and structure, materiality, climate design, and detailing will further elaborate. Hereby, the technical design is not considered something that can be preformed outside of the context. Therefore, reflection on the analyses of the urban surroundings will acts upon issues as proportion, repetition, material, texture, dimensions, i.e..

#### # Literature and general practical preference

The graduation studio materialisation SADD focuses on the simultaneously development of a master plan, building concepts, spatial quality, materialisation, façade design, and building technology. The literature study that can support my design development is directed at research, theories and precedents on urban spacial quality, civic architecture, private- and public space, and sustainable building design. This addresses notions of *identity, modernity, representation, image, perception, public and private, social/communal space, monumentality, global-/local environmental boundary conditions, climate design, energy, climate and comfort, and sustainable building strategies*.

#### General practical preference

For the development of my project in the Msc 4 period, I'm relying on my prior obtained knowledge during my studies. This includes a bachelor in Building Construction and Built Environment with a specialization course in Architecture, completed in 2011 at the Academy for Architecture, Built Environment and Civil Engineering - Hanze University of Applied Sciences, Groningen. It also includes the Msc 1 program (Materialisation) and the Msc 2 program (Hybrid Building), with the Faculty of Architecture, Urbanism and Building Sciences at Delft University of Technology. This is complemented by three six months internships with; Van Wijnen bv Groningen, DP6 Architectuurstudio Delft, and Broekbakema Rotterdam.

For support provided by the university I wish to consult on my project with specialist teachers in; architecture, construction, climate, building technology, and model making.

## Bibliography

### Books and Academic literature

Avermaete, T.; Havik, K.; Teerds, H.; ed. al. [2009] *Architectural Positions; Architecture, Modernity, and the Public Sphere* [Amsterdam] SUN publishers

063 Rem Koolhaas - Generic City

085 Manuel de Solà-Morales - Public Spaces, Collective Spaces

093 Herman Hertzberger - Collective Space, Social Use

155 Kengo Kuma - A Return to Materials / Architecture of Emptiness

171 Louis I. Kahn - Monumentality

203 James Stirling - The Monumental Informal

248 Steven Holl - Seven Principles for the Interpretation of Urban and Rural Vernacular

257 Aldo Rossi - The Architecture of the city

265 Oswald Mathias Ungers - Architecture of the Collective Memory

299 Rob Krier - Typological and Morphological Elements of the Concept of Urban Space

341 Bernard Tschumi - Violence of Architecture

351 Superstudio - The Fundamental Acts: Life/Ceremony

383 Antonio Monestiroli - Questions of Method

Blokland, E.; Dobbelsteen, A. vd.; Huijbers, K.; Yanovshtchinsky, V.; [2012] *Architectuur als klimaatmachine; Handboek voor duurzaam comfort zonder stekker* [Amsterdam] SUN

Burg, L. van den; Stolk, E; ed. [2004] *Urban Analysis Guidebook; typomorphology* [Delft] Delft University Press

Hegger, M.; Fuchs, M.; Stark, T.; Zeumer, M.; ed. [2008] *Energy Manual; sustainable architecture* [Munich] Birkhäuser Verlag AG

Herzog, T.; Krippner, R.; Lang, W.; ed. [2008] *Facade construction manual* [Munich] Birkhäuser Verlag AG

Koolhaas, R.; [1997] *Delirious New York: a retroactive manifesto for Manhattan* [New York] The Monacelli Press

Riedijk, M.; ed. al. [2010] *Architecture as a craft; architecture, drawing, model, and position* [Amsterdam] SUN publishers

Ursprung, P.; ed. [2005] *Herzog & de Meuron; Natural History* [Baden] Lars Müller publishers

## 4. REFLECTION

### # Relevance

Acting on the environmental awareness that has increasingly come to our attention, made possible in part by the United Nations itself, the new building design for the UN environmental program represents the global political boundary conditions which pose significant economic impact and social relevance.

The unique design location brings forward the opportunity to work on the difficult relationship between the existing UN-headquarters and the urban context of Manhattan. Therefore, the design developed in the direction creating a meaningful and valuable place in the city. By proposing a vibrant business centre, redesigning the UN-complex for public accessibility, and projecting a recognizable building, the project achieves great relevance in urban quality.

# APPENDIX

## # Time Table and Interdependencies

The time planning is tuned to the energetic and smooth development of the design. Important in the process are the simultaneous development moments. The planning directs towards these moments of integral design development, as several stages in the design development overlap. Furthermore, reflection on the process is key as designing is merely a linear process. In the initial phase of a presentation are directed at concluding on the design at all different stages of the design.

Besides the proceedings of my graduation project, I have no significant activities that impact on the presented planning. In the period between P2 and the start of semester Msc 4, I plan to go on vacation, study on my graduation project, and work three till four days a week at the architectural office Broekbakema in Rotterdam.

For the coming period I'm happy to work hard in order to achieve a great final project with the desired level of detail.

