UPRISE
United Nations Environmental Council

designing the UN Headquarters for Sustainability in New York City
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MSc Architecture: Materialisation
Strategic Architectural Design Development

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UPRISE
United Nations Environmental Council

1 assignment
2 research - sustainability challenge
3 urban context
4 design development
5 landscape
6 building - Delegates Area
7 building - Employees Secretariat
8 conclusion
1 assignment
designing the United Nations Environmental Council in New York City
2 research - sustainability challenge
what is sustainable development?

definition:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

definition from Our Common Future, also known as the Brundtland Report
sustainability challenges

1

GOAL
being a good example
by making a sustainable building

2

GOAL
exploring new opportunities of producing food
by combining farming and architecture

key value = sustainable solutions are integrated into the design
sustainability challenge 1

1

GOAL
being a good example
by making a sustainable building

themes:
- bioclimatic principles
- water
- energy
- green
- social
- materialisation
- transportation
sustainability challenge 1

1

GOAL
being a good example
by making a sustainable building

themes:
- bioclimatic principles
- water
- energy
- green
- social sustainability
- materialisation
- transportation

bioclimatic principles
sun orientation

water
closing the water cycle

green
creating space for the development of biodiversity

social sustainability
draw people into their living environment
sustainability challenge 2

2

GOAL
exploring new opportunities of producing food by combining farming and architecture

research:
- problem
- benefits urban farming
- examples New York
- proposal

urban farming
producing food in the city
sustainability challenge 2

2

GOAL
exploring new opportunities of producing food by combining farming and architecture

research:
- problem
- benefits urban farming
- examples New York
- proposal

growing population and increasing urbanisation - distance between people and food enlarges
depletion of fossil fuels makes the current form of agriculture impossible to maintain
regular agriculture uses up to 70% of fresh water globally and is the main source of water pollution
sustainability challenge 2

2

GOAL
exploring new opportunities of producing food by combining farming and architecture

research:
- problem
- benefits urban farming
- examples New York
- proposal

less transport = less energy

more green in the city, alleviating heat stress and increasing biodiversity

fresh food, full of nutrients

organic household waste as compost means less pesticides are being used - less pollution

new job opportunities

added values: educational and recreational

Eagle Street Farm, NY
sustainability challenge 2

2

GOAL
exploring new opportunities of producing food
by combining farming and architecture

research:
- problem
- benefits urban farming
- examples New York
- proposal

Brooklyn Grange

Public Farm I by WORK Architecture Company
sustainability challenge 2

2

GOAL
exploring new opportunities of producing food by combining farming and architecture

research:
- problem
- benefits urban farming
- examples
- proposal

in landscape:
- forest garden
- rooftop agriculture & green walls

in building:
- hydroponics
- aquaponics
3 urban context
current situation - green

city scale

improving waterfront parks currently underway

neighborhood scale

addition of a park on the UN plot improves the accessibility of green within walking distance

- Bryant Park: 1.32 km
- Central Park: 1.75 km
- UN plot
current situation - traffic flow

- Slow traffic: 65% / 35%
- Fast traffic: 5% / 15%
- Bus: 10% / 10%
- Tourist bus: 15% / 10%
- Flow visitors / flow employees: ..% / ..%
current situation - security

issues:
- busy 1st Avenue makes the entrances invisible
- FDR Drive underneath the United Nations = high-risk
schematic masterplan

masterplan solutions:
- natural security border
- green boulevard by expanding existing tunnel 1st Ave
- safe and visible entrances
- green waterfront by tunneling the FDR Drive
4 design development
form research

high rise, low rise or landscape building?
chosen form

high rise, low rise or landscape building?

considering:
- sun orientation
- view from and towards building
- continuation of existing compound
users

security difference

Delegates
use: a few times a year

Press & business
use: occasionally

Employees
use: working days

Visitors
- tourists
- citizens
use: every day

design decision:
three different buildings
1 Delegates
2 Employees
3 Visitors
site scheme

0 empty plot

9 m
site scheme

1  stair terraces towards the waterfront

47 - Dag Hammarskjold Plaza
site scheme

2 buildings

47 - Dag Hammarskjold Plaza

employees

deblegates

visitors
developing model

0 start model

1 emphasis sun and view

2 boxes for special contact with the outside

3 landscape underneath
design
design
5 landscape
landscape plan
1 gather
2 relax
3 Visitors Centre
4 forest garden
5 waterfront
1. **gather**
   a place to meet, with a lifted green wall for sun protection

2. **relax**
   small scale boxes to retract from the busy city

1. Swiss Re office by BRT Bothe Richter Teherani architects

2. Oliver Bishop / Urban Plant Pot
3 Visitors Centre

a place to learn everything about food

functions outside:
- patio with agricultural green wall (a)
- agricultural rooftop (b)

functions inside:
- media centre (c)
- experimental zone for agricultural methods like hydroponics (d)
- restaurant (e)

d media centre (half under ground)
4 forest garden
a place to learn about the production of food by nature, and to be invited to take action yourself

5 waterfront
a place for recreation and sports

"the REAL estate" by AL/Arch  Harbour Bath by PLOT = BIG + JDS
Seedbomb Vending by COMMONStudio Greenaind
approach from city
approach from city
view from East River
section stair terraces

Palazzo Pepoli by Mario Bellini
overview program

building design

- Delegates Area
- Employees Secretariat

one shared entrance
6  building design - Delegates Area
entrance
connection delegates - employees

stairway to the sky

- meeting your colleagues
- exercise
- connection of special functions

Delegates Area
1 entrance
2 Delegates Lounge

Employees Secretariat
3 installation floor - Living Machine
4 exposition floor and garden
5 restaurant and green house
views

Delegates Area
1  stairs beginning
2  Delegates Lounge
7 building - Employees Secretariat
program

- green houses & restaurant
- offices
- exposition floor
- installation floor
construction

1 table construction
construction

2 floors - stabilizing the table structure
construction

3 columns
construction

4 floors
construction

5 inbetween floors - connecting element
6 cores - staircases and elevators
taking the stairs

stairway to the sky

- meeting your colleagues
- exercise
- connection of special functions

Delegates Area
1 entrance
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Employees Secretariat
3 installation floor - Living Machine
4 exposition floor and garden
5 restaurant and green house
installation floor - building and water

Living Machine

natural treatment of water
exposition floor - garden and workshop space
Work spaces based on United Nations Capital Master Plan

Four types of workspace:

A. USG/ASG (closed, 36 m²) - only on the 6th floor
   Under-Secretary-General / Assistant Secretary General

B. Directors (closed, 18 m²) - only on the 6th floor

C. Professionals (open, 9 m²)

D. General Services (open, 6 m²)
offices - boxes
offices - boxes
offices
top floor: greenhouses and restaurant
facades

- south; double-skin facade
- north; triple glazing
south (river side)
south (riverside)

winter

summer

key value: natural ventilation
north (city side)
north (city side)
8 conclusion
key value - sustainability integrated in the design
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United Nations Environmental Council

thank you