UNEC_ Building for Sustainability
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1-Understanding the place
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Understanding the place
-Introduction – Manhattan impression
-Introduction – Need for silence and Green

Legend
- private green space
- publicly accessible green space

Most of the green space in the UNHQ area is private and centered within building blocks. UNHQ district has the least green public spaces in all of New York.

The private green area is visible but non-accessible for visitors is mostly in the form of court yards within every residential city block.

The public green spaces gradually increase towards the waterfront and in the north and west border of the centre of the CBD.
-Introduction –Need for silence and Green
Introduction – Manhattan impression – city greens

Central Park

UN Site
Introduction - Manhattan impression

Separation of the Green and city
Introduction – Manhattan impression
-Introduction - integrate the patios

Paley park, NY
Patios - Bring the nature into interior
-UNEC Building- Patio & sunken garden

Theme: Patios inside and outside space
Goals & Analysis
-Introduction – SADD/UNEC- World Organization

Goals

- Fit in with the urban context, urban connection
- Bring the nature to interior-theme-Patio
- UNEC should be sustainable itself
Introduction - UN Site - End of 42 St

Forty-Second Street

The entire street, river to river, may be regarded as an urban megastructure and is defined by continuity of movement, the interconnections of its activities, and its popular impression as a unit. In a sense, it is a single long building, four blocks wide and fourteen blocks long, with urban "rooms" attached to the central corridor. The "rooms" may be spaces such as Bryant Park, the United Nations Plaza or Times Square, or a special corridor such as the Fifth Avenue shopping spine.
-UNEC Building- should really fit for the surrounding

Street Closures for UN Headquarters

Once a year, mainly in September, the world leaders come together to talk about the world problems for one week at the General Assembly at the site of the United Nations Headquarters in New York. Due to safety many streets are closed during this week, either for a couple of hours or the entire week.

This map shows the roads that suffer from the General Assembly.

Note for the FDR (Franklin D. Roosevelt) drive or East River drive is that this road normally doesn't allow for commercial traffic like trucks or vans. Only some busses are allowed on this road. During the General Assembly the road will subject to intermittent closures.

Although residents and commuters alike say the annual street closures are a bit of a headache, yet see it as a part of New York City life. Remember these closures will only occur once every year.

Scale 1:10000

Security

Sources:

http://www.nyl.com/content/top_stories/125703/united-nations-general-assembly-brings-traffic-headaches


http://abclocal.go.com/wabc/story?section=resources/traffic&id=7026244
Introduction – UN site waterfront impression

**MASTERPLAN**
Highway blocking the city from the water
-Introduction – green the UN site waterfront and return it to public

**MASTERPLAN**
Highway blocking the city from the water
Introduction – green the UN site waterfront and return it to public

Main routing

42 St
-Introduction – UN site impression

Goal- Strong geometry impression fit for the urban connection
-Introduction – UN site impression
- UNEC Building
programs
-UNEC Building- idea development

-important building usually sit on terrace as a buffer zone
-UNEC Building- idea development

Park for public

City living room

private

public
UNEC Building - Program

private

hotel
office

library

patio
auditorium

lobby
lounge
parking

public

No workers for office at night
-UNEC Building-Other considerations about Sustainability- hybrid multifunction
-UNEC Program idea-City within a building

- Light up the building at night
- Rent to tourist except the meeting time.
- Balance the maintenance cost.
- Cars, Parking, Traffic, CO₂…
Introduction – fit in UN site’s skyline?
- UNEC Building-Urban connection
-UNEC Building-Night view
UN Square—Cultural/leisure center
-UN Square - Opportunity as catalyst to enrich the leisure & cultural activities
UN Square - Opportunity as catalyst to enrich the leisure & cultural activities
idea development
- UNEC Building - idea development

The UN Headquarters of Sustainability
- UNEC Building - shadow analysis in July

July
9am-5pm
-UNEC Building- shadow analysis in Jan.

Jan.
9am-5pm
-Research/Analysis- Building position

Building position

Water front park

UN Square
1. Follow the two urban axis and the typology-Tower free more space for public park
2. Cut the tower into two towers- more friendly in the volume
3. Cut the tower into three - more friendly and balanced in the volume
4. Cut the tower top and more urban connected in the context in UN site
5. Push down the top and face more to the East river for the better skyline
6. Push down the third tower emphasize the main entrance axis
-UNEC Building- idea development

P2

P3

P4
ideas for Sustainability
1. urban scale
-UNEC Building- Sustainability
Public Green Space
1. Keep the existing green
2. balance in construction
2. Building itself
-UNEC Building- Sustainability

3. Patio bamboo garden

4. PV cells on roof

5. Water collection

6. Use water underground for climate control
-UNEC impression-lobby patios
- UNEC Building-Patio space-Bamboo garden

Benefits compare to trees:
1. Grow fast
2. Some are Evergreen
3. Shallow roots
-Patio space-Bamboo garden
Sustainable applications and souvenirs:
- UNEC Building-façade idea

It is also can be realized by bamboo

Similar idea with plywood
Patio space-Bamboo garden-educational base
Bottom up social issue context: SIMILAR IDEAS for sustainable city development

www.eetbaarrotterdam.nl
UNEC Building-Installation

AIR VENTILATION

CLIMATE CONTROL
UNECA Building-Details-PV cells on the roof
UNECE - rain collection and climate control

Summer Climate Ceiling For cooling

Winter Heating floor
facade
- UNEC façade- surrounding context-glass towers
-Since Chicago school-Skyscraper / Steel & glass
-UNEC facade- double-glazed curtain wall or double façade?

Planned for completion in 2014, the iconic UNHQ is in the middle of a $1.876 billion refurbishment project,... A new high performance double-glazed curtain wall will be installed...

http://www.archdaily.com/215313/
- UNEC Building- double-glazed curtain wall or double façade?

- double price.
- Not really works.
-UNEC Building- curtain wall towers in NY
Bank of America Tower

Sector: Corporate/Commercial | Location: New York NY United States
Architect/Specifier: Cook + Fox Architects

..., the sustainable tower marks the first LEED Platinum commercial skyscraper in the world.

http://www.archdaily.com/166930/the-bank-of-america-tower-cook-fox/
- UNEC Building-Sun shading used in western world
-UNEC Building-Sun shading used in the East
- UNEC Building-façade idea

- Transparent (cold)
- Rigid division
- Efficiency

+ Natural (warm)
- Activity reflection
- Kindness
- UNEC Building
- UNEC Building
structure
- UNEC Building - ideas for structure

The UN Headquarters of Sustainability
-UNEC Building- structure diagram
-UNEC Building- structure diagram
-UNEC Building- structure diagram
-UNEC Building- structure diagram
Floor plans & interior
- UNEC Building-Floor plan

Ground Floor

wooden deck

library

void
-UNEC Building impression-lobby space
- UNEC Building - Floor plan

The UN Headquarters of Sustainability

-2F
-UNEC Building- Patio & sunken garden

Theme: Patios inside and outside space
-UNEC Building- Patio with silence and Green
-UNEC impression-lobby left patio 1
-UNEC impression-lobby right patio 2
Architecture and nature - each “a part of other”

"Interior is Exterior is Interior" - Mies Van Der Rohe

Patio inside and outside space:

Architecture and nature - each “a part of other”.

In order to improve the interior space quality, and also fit for the idea of the new master plan, a public park open to the public. Introducing the patios into the building and it is also bringing the nature into interior. Then it is reality a “transparency” the inside and outside, and make the UNEC and nature, each “a part of other”. On the deck look down into the patio, the patio is kind of inside the building, when enter the building, the patio is outside space to bring the sunlight and nature into the building.
- UNEC Building impression-lobby and patios
-UNEC Building impression-lobby and patios
-UNEC Building

View from the platform to the East River

View from east river
UNEC Building - Floor plan

The UN Headquarters of Sustainability
- UNEC Building - Floor plan

1st Floor plan
-UNEC Building-Floor plan

2F plan

The UN Headquarters of Sustainability
- UNEC Building - Floor plan

6-8F plan
- UNEC Building - Floor plan
-UNEC Building- Hotel rooms
- UNEC Building - Roof plan

The UN Headquarters of Sustainability

12F plan
-UNEC Building- Roof restaurant
Details
realization
- UNEC Building - structure principle

8m gird is fit for parking 3 cars
- UNEC Building-glass panel façade division

8000 = 1000x8 or 8000 = 1600x5?
UNEC Building-façade & section entrance lobby

The UN Headquarters of Sustainability
Details - Stair and floor height

According to $2h + L = 630 - 650$

Step Size: 180X270

Floor height:
$H_{GF} = 180 \times 22 = 3.96 \text{m}$
$H_{1F} = 180 \times 20 = 3.6 \text{m}$
Develop its own module in details helps to formulate a clear and strong image.
UNECA Building-Details

parapet section 1:5

- safety glass
  (fireproof glass at alternate story)
- sprinkler
- mechanical ventilation
- PV cells
UNECE Building-Concise glass panel Details
One panel for one floor

sprinkler

sun shading
(rotatable and slidable)

(fireproof glass at alternate story)

vertical section 1:5
UNEC Building-Details

- aluminium panel
- removable
- safety glass
  (fireproof glass at alternate story)

vertical corner section 1:5
UNEC Building-Details

removable
wood deck

entrance section 1:5
FIN
Thank you.