The European Square

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Design Task
Design Task

- New Headquarters for the European Union
- In line with the masterplan of Portzamparc
- 220,000 m² program mainly office space
- Icon for Brussels and the European Union

Source: ADT-ATO
Location
Hotspots Brussels
Brussels as capital of Belgium
Brussels as capital of Europe
European Quarters
Local Character
Rue de la Loi vs. Josefstreet

Source: own pictures
Masterplan Portzamparc

Current Situation

Masterplan

Source: ADT-ATO
Masterplan Portzamparc
European Union
Many identities

Source: ce-authorizedrepresentative.eu
The People

Source: lookingtobusiness.com
Separation European Union and the People
Closed EU Buildings

Source: own pictures
Transparency European Union
Problem Statement & Concept
Public Space around high-rise Rotterdam

Source: own pictures
Public Space around high-rise

Source: own pictures
Public space around high-rise is rarely used!
No Public Space

No Human Scale

No Function

No Users

Source: own pictures
Concept: The European Square

Source: own picture
European Squares
Characteristics: European Square

- Low-rise Buildings
- Enclosed Space
- Public Space
- Icon
- Function Mix

Source: different sources
European Square as central heart of the EU-area
Critique on the Program
Given Program

- Program of 220,000 m²
- Mainly office space
- Height of at least 220 m
- Masterplan Portzamparc
- Setback rules
Current Situation: Monofunctional
Proposal: Multifunctional
Building as an icon
Program European Quarters

Current Situation VS Masterplan
Given Program: Monofunctional
Office space available

Source: own pictures
Vacancy in the European Area of 340,000 m²!
24-hour Activity: Multifunctional
Mass Study
Mass Study: Translation Critique and Program
Mass Study: Convergence
Mass Study: Convergence
Mass Study: Convergence
Mass Study: Best Option
Mass Study: Position Building

Orientation Sun

Public Space

Urban Integration
Sun study: Looking for the right location and shape

Summer 13.00 pm
Strong shape: Represents Power
The Square

The closed block encloses the European Square.
The Building

The strong shape of the arch represents the power of the European Union.
The European Square

The tower defines the public spaces.
Concept: The European Square

The closed block encloses the European Square.

The strong shape of the arch represents the power of the European Union.

The tower defines the public spaces.
Final Mass
Design Process

European Union  VS  People

Design
Design Process

European Union  VS  People

Design

Facade  Public Space  Program
Design Process

European Union  VS  People

Design

Facade

Openness

Public Space

Mix

Program

Mix
Design
Program: Parking
Program: Cinema
Program: Conference Center
Program: Retail
Program: Hotel
Program: Wellness & Sports
Program: Residential
Office
Program Combined
Square Marie-Louise
Urban Integration
Overview
View from Berlaymont Building
Level -1: Josefstreet
Level -1: Entrances
Vertical Transportation
Elevator System East Tower
Elevator System West Tower
Parking
Ground Floor: Squares
Ground Floor: Entrances
Public Space
By cutting off the corner, a new public park has been created.
Public Space: Ground Floor

The tower defines three different public spaces; two squares and an atrium.
Public Space: Roof Garden

A semi-public roof garden offers outdoor space for residents and office employees.
A public sky garden with an amazing view over the EU-area and Brussels is created on the highest floor.
Public Space
Public Space
Connections Public Spaces
Urban Connections
Sun light

The position of the public spaces is optimal for the entering of sun light during the entire day.
Human scale: current situation

By current high-rise projects the human scale is lost.
Human Scale: Plinth

By creating a low-rise plinth a more human feeling has been created.
By adding public spaces to the plinth the building adds quality to the environment and will secure the human scale.
By subdividing the public spaces in smaller parts, different identities are created.
Ground Floor: Public Spaces
Public Square
Public Square: Identities
European Square
Level 1: Rue de la Loi
Level 1: Entrances
View on the Rue de la Loi
Level 3: Residential

- 98 dwellings
- Two sizes: 160 m² and 130 m²
- Common Swimming Pool, Fitness Center and Roof Garden

1. Gallery
2. Terrace
3. Living Room
4. Kitchen
5. Bedroom
6. Bathroom
7. Toilet
8. Storage Space
Residential: Connections
Render from gallery
Level 3: Hotel

- Hotel ****
- 68 rooms
- 2 types: double room and suite
- Common Swimming Pool, Fitness Center, Wellness Center and Roof Garden
Common Swimming Pool
Level 4: Roof Garden
Recreation in Brussels

Source: own picture
Surrounding Parks

- Parc de Bruxelles
- Square Marie-Louise
- European Square
- Parc du Cinquantenaire
- Parc Leopold
Roof Garden
Level 19: Typical Office Floor
Flexibility Office Floors
Typical Office Floor
Level 23 & 24: Sky Lobby
Level 35 & 36: Flexible Offices
Flexible Offices
Setbacks in the upper part of the building are necessary for the entering of natural daylight.
Flexible Office Floor
Level 43 & 44: Sky Garden
Sky Garden
Sky Garden
Fire Strategy
Fire Strategy: Ground Floor
Fire Strategy: Tower
Fire Strategy: Upper Floors
Structure
Structural Research
Dimensions
Structural Principle
Load-bearing

Span of 60 meters

Longitudinal Section  

Cross Section
Structural System

- a) Concrete Core 500 mm
- b) Steel Truss (8m) 400x400 mm
- c) Steel Beam (10m) HEA 400
- d) Steel Column HEA 400 (compression)
- e) Steel Column HEA 300 (tension)
- f) Bubbledeck floor 10000x2000x300 mm
Facade view
Structural System Tower

Concrete Core
20,000x20,000x500
Concrete Cores
Steel Columns
Steel Beams
Steel Truss Structure
Steel Beams
Steel Columns
Support Trusses
Concrete Floors
Facade
Two Facade Strategies
The complete transparent facade ensures a 360 degrees view.
Transparency: Inside view

The complete transparent facade offers the people a view inside the European Union.
Closed Cavity Facade

- High Visual Comfort
- Climate Buffer
- Limited Vertical and Horizontal Lines
- Integrated Sunscreening
- Low Maintenance
- Flexibility in Office Space

Source: detail-online.com
Detailing Facade
Climate: Heating & Cooling

Floor Heating

Floor Cooling
Climate: Ventilation

Floor Heating:
Hot Air Supply and Mechanical Ventilation + Heat Recovery

Floor Cooling:
Cold Air Supply and Mechanical Ventilation + Heat Recovery
Human Surrounding
Classic Low-Rise Facade

- Connection with Existing Low-Rise Buildings
- Create Human Feeling
- Preserve Human Scale
- Stone Cladding
- Contrast with High-Rise Building

Source: architectenweb.nl
Detailing Facade

+17m Floor 5
  Roof Garden

+14m Floor 4
  Residential

+11m Floor 3
  Residential

+8m Floor 2
  Residential

+5m Floor 1
  Residential

+0m Floor 0
  Retail & Square
South Facade
Sustainability
Green Roof

- Recreational use residents and office employees
- Natural insulation
- Rain water collection
Waste Heat Recovery

- Use of the waste heat of the Metro
- Use of the waste heat of the dwellings
- Waste heat used for climate control in the office tower
- Heat storage underground
Grey Water Use

- Rain water collection on the roofs
- Used for irrigation and toilets
- Covers 98% of the toilet water use
- Storage on different levels (technical floors)
View from Tunnel Rue de la Loi
BRUSSEL CARD

24 | 48 | 72 HOURS

MUSEUMS | TRANSPORT |
ATTRACTIONS | SHOPS | RESTAURANTS
Greetings from Brussels