Teleport
portal to development

MSc5 Hybrid Buildings A
08 October 2009 - P4

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Study question:

‘By what design intervention can the center of the Teleport Area be transformed into a more efficient, continuous and liveable environment?’
study question

URBAN
- urban analysis
- objectives
- urban concept
- masterplan

BLOCK
- objectives
- concept
- cluster design

proof system by case study

building design
- circulation
- building layout
- construction system
- installation system
- facade

- light & visibility
- mixed program
- flexibility
- appearance
Urban design
Location // Teleport
Urban design
Analysis // zoning
Urban design
Analysis // infrastructure
Objectives

OBJECTIVES:
> re-connect
> intensify
> humanize
Urban design
Concept // re-connect

Teleport as transport hub

a green “band aid”

the membrane

<Slow Traffic>

<Fast Traffic>
Urban design
Concept // intensify
Urban design
Concept // humanize
Urban design
Masterplan // approach

> re-connect
> intensify
> humanize
urban space

mixed program
--> housing
--> offices
--> shops
--> catering industry
--> other facilities

multiple layers
--> highrise
--> facilities
--> slow traffic
--> fast traffic

optimized infrastructure
--> extend train platforms
--> bus / tram terminal
--> parking facilities
--> distribution routes
--> separate slow traffic

comfort & safety
--> visibility & overview
--> light
--> green
--> control people flow
--> physiological aspects

program

infrastructure

--> wide street profiles
--> parks & terraces
--> use of daylight
--> closeable areas
Urban design
Masterplan // setting

Sloterdijk Station
Highway A10
Urban design
Masterplan // park-over / network / building mass

Highrise & Boulevards
Urban design
Masterplan // infrastructure
Urban design
Masterplan // parking
Urban design
Masterplan // highrise
Urban design
Masterplan // impression
METHOD:

STUDY CLUSTER TO PROOF THE USABILITY OF THE MASTERPLAN

OBJECTIVES:

> light & visibility
> flexibility to accommodate mixed program
  > dwellings
  > offices
  > retail
  > catering industry
  > other facilities
Cluster Concept

- Strip with facilities
- Highrise on strip
- Light corridors
- Bus + Tram Terminal
- Train Platforms
- Car Park
Cluster Concept

Level -03: Infrastructure (Fast Traffic)
Level -02: Construction, Installations, Distribution
Level -01: Facilities (Run Shopping)
Level +00: Facilities (Fun Shopping); Entrances
Level +01: Highrise (Offices, Hotels, Dwellings) (and up)
Level -02: Construction, Installations, Distribution
Level -03: Infrastructure (Fast Traffic)
Cluster
Ground floor (+00)
Cluster Impressions
METHOD:
CREATE BUILDING DESIGN TO PROOF THE USABILITY OF THE CLUSTER DESIGN

OBJECTIVES:
> light & visibility
> mixed program
> flexibility (change usage over time)
> appearance

CONSTRAINTS:
> building above train tracks and platforms
Building
Concept // sight

CONNECT & OPEN UP
CONNECT & OPEN UP
CONNECT & OPEN UP
CONNECT & OPEN UP
CONNECT & OPEN UP
CONNECT & OPEN UP

Building
Concept // installations

CONNECT & OPEN UP
CONNECT & OPEN UP

Building
Concept // facade
Building // circulation
Concept
Building // circulation
Clustering studies

Solo towers w/ mono core

Tower pair w/ dual core + ring

Tower cluster w/ quad core + ring
Core studies

Core embedded in void

Core plugged into towers
Building // circulation
Organization

A (stairs)  B (elevators)  A (stairs)
Building // circulation
Section
Entrance residents

Entrance visitors

boulevard side on park level
Building // circulation
Details

- main column
  steel 200 x 200mm
  concrete core

- pyrobel 60min wb150

- stability cross connection

- metal stud wall 60 WD60D
  2x 12.5mm gypsum panels
  60mm insulation
  60mm cavity
  60mm insulation
  2x 12.5mm gypsum panels
Building // circulation
Impression
Building // construction
Concept
Building // construction System

Section AA1

Plan upper floors

Section BB1

Joints

facade column - beam hinge joint
core column - beam clamped joint

Steel column
Tubular profile 200 x 200
Concrete core

Braces

Steel facade column
Tubular profile 120 x 80
Concrete core

Steel column
Tubular profile 120 x 80
Concrete core

Concrete core
one core per tower
service zone in tower center
(in suspended ceiling)
other services in floors
climate in combination w/ facade
Building // installations

Section AA3

System

- System services above suspended ceiling
- Low temperature surface heating in top of floor system or in additional dry floor system (adjustable to floor usage)
- Stairs & lifts

Section BB1

Plan upper floors

Section BB1

- Mechanical ventilation pre-cooled / heated per dwelling / office
- Natural ventilation direct or indirect through facade panels

HEATING
DRAINAGE
ELECTRICITY
VENT SYS in PLAN
Natural ventilation
> no ventilation (closed)
> indirect (pre heated) ventilation (4-10 deg)
> direct ventilation (> 10 deg)

Low surface heating
> low surface heating in floor system (IDES)
> if required placed in dry floor system on top (for extra insulation)
Mechanical ventilation
> in addition to natural ventilation
> air in/out via bridge
> heat regulation using water system (distribution via shafts in core)
> variable air volume (VaV) system depends on function (dwellings / offices / ...)
Building // facade

Concept

> contact vs privacy
> day light vs sun shading
> expression (of activity)
Building // facade System

Polycarbonate (PC)
- highly transparent
- lightweight (1200 kg/m³)
- temperature resistance
- impact resistance
- thermoplastic (recyclable)

900 x 900 x 4mm PC

30 - 30 - 30 - 30mm (not to scale)

min cover 20%
max cover 95%
black -> silver
Building // facade
Detail // vertical

- 4mm polycarbonate
- Glass (60min fire proof)
- Support profile
- Reflective coating
- Edge beam

IDES Floor
- Optionally extra dry floor (for extra insulation and flexibility)
- Screed
- Profiled steel plate with tubes for heating system
- Insulation
- Steel cassette
- Optionally suspended ceiling
Simulation

Prototype

Rendering

Building // facade
Building // facade
Impression
Building // facade
Impression lighting
- accommodate different programs
- changeable over time
- orient towards park or boulevard
- more private activities towards center
Building // layout
Dwellings (+05)

DWELLING A+

DWELLING A

DWELLING B

DWELLING C

DWELLING A+
Building // layout
Dwellings (+06)

DWELLING C

DWELLING A+

DWELLING A+

DWELLING D

DWELLING D