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culture center & swimming pool for Antwerp University
URBAN RESEARCH
Antwerp Centrum

Scheldt River
historic urban fabric of Antwerp (1649)
building figure ground

porosity of city

porous city, Contemporary Antwerp
contents of porosity

parking lot

courtyard

alley
two kinds of courtyards

Plantin museum

Rubens house

courtyard by one building

formal courtyard

courtyard by neighbor buildings

informal courtyard
block the courtyards from the street

the wall of Hof van Liere

courtyards of Hof van Liere
the character of Culture Center – public oriented facility
the diversity of programme
how can each programme can influence on each other and make synergy
varying encounter in the Culture Center

see
(terrace & window)

distribute
(public layer)

gather
(courtyard, cafe, student center)

show
(general theater, rehearsal hall, formal courtyard)

distribute
(public layer)
SITE OBSERVATION
Antwerp Centrum

- Scheldt River
- MAS museum
- Cathedral
- University district
- Station
University district

- Hof van Liere
- University headquarter
- Site block
site overview
contents of porosity in the site block
different sectors and building types
URBAN DESIGN PROPOSAL
To design a series of courtyards in order to bring new public spaces into the site.

urban concept | network of a series of courtyards
public courtyard network in Antwerp University
To design new buildings that correlate with the surrounding buildings.

Urban concept II - combination of varying types of new buildings.
transforming of mass according to context

to make terrace

to make pocket courtyard

to make articulation

to make focal point

to get sun light into pool

to make height for dance

to make rhythm of urban facade

to meet the height to surrounding buildings

to respect next building

to make pocket courtyard

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to respect next building

PUBLIC INTERIOR SPACE

network of a series of courtyards
entrance yard
formal courtyard
component parts of the formal courtyard

street furniture

horizontal space form

plan configuration

concept: courtyard as a room
- hardscape pavement
- indented entrance foyer
- plinth (3m height)
- minimal street furniture
- subtle edge with stair
informal courtyard
- landscape pavement
- curved pedestrian route
- existing trees
- minimal street furniture
front yard
- hardscape pavement
- indented entrance foyer
- object tree
- minimal street furniture
result - a series of courtyards in the site block
CONTEXT

RELATIONSHIP WITH SURROUNDINGS
street view _ Lange Winkelstraat
- vertical rhythm by width of bay
- horizontal rhythm by height of bay & plinth
- street wall by similar height & material of building
- differential character by window type
street view _ Kliene Kauwenberg
- vertical rhythm by width of bay
- horizontal rhythm by height of bay & plinth
- frontyard which welcomes to the inside site block
courtyard of church
- enclosing by different types of building
- repetition of similar window type
- horizontal link with cornice and plinth
- visual & physical connection between cafe and courtyard
PUBLIC SPACES IN PUBLIC LAYER

RELATIONSHIP WITH COURTYARD
concept _ layering with public spaces

courtyard surrounded by a series of public spaces

To have the public spaces upfront to the new courtyard connect each building and activate the public area.
- circulation
- decorative interior wall with CMU on ground level
- repetition of sky light
main entrance hall
ground floor plan
rehearsal space
natural sun light
2nd floor plan
public terrace
general theater
ground floor plan

1st floor plan
public corridor & staircase
ground floor plan
inbetween canteen
MATERIALIZATION
public area _ raw material
- ceiling : wooden panel
- load bearing wall : exposed concrete
- interior wall : concrete masonry unit
- circulation floor : polished concrete screed
- floor : natural stone

private area _ finishing
- ceiling & wall : acoustic wooden panel, zypsum board
- floor : wooden floor, vynil sheet, carpet

interior material coding
exterior material

exterior wall _ brickwork + kalei
- bond : stretcher
- color : light grey kalei (upper), dark blue (lower)
- size : 290 x 100 x 40

outside facade ( height of plinth : 1.5m )

courtyard side facade ( height of plinth : 3.0m )
layer 1  _  prefabricated conc. panel

layer 2  _  brick masonry with Kalei

layer 3  _  window

facade system
outside facade detail
courtyard facade detail
*upper part*
- bond: stretcher
- color: light grey brickwork + kalei
- size: 290 x 100 x 40

*plinth lining*
- precast concrete lintel

*cornice lining*
- precast concrete lintel

*lower part*
- bond: stretcher
- color: dark blue brickwork
- size: 290 x 100 x 40
STRUCTURE & CLIMATE DESIGN
structure system

outside: load bearing wall
inside: column

load bearing core wall
primary column & girder
hollow core slab
secondary beam
load bearing core wall
load bearing wall
climate system concept

VAV system
1. pump
2. cooling tower
3. heat exchanger
4. condenser
5. evaporator
6. boiler
7. fan
8. heating
9. cooling
10. filter
11. water spray
12. supply air
13. exhaust air
14. return air
15. induction unit or fan coil unit
16. space being ventilated
17. air handling unit
18. solar heat gain
19. heat loss through fabric

ventilation system with air _VAV system

heating system with hot water
applied passive sustainable system
applied ventilation system