Study a classical building and its particular construction characteristics and develop a project that will use a particular structural system to achieve more efficiency during the construction.

Choose the building, and modify it in order to use it at Madrid, taking care about the climate was one of the initial steps, then we looked for a structural precast system, which modules can be considered at the planning to improve it till obtain the best quality, execution time, cost and energy gains.
PROJECT CHASSE TERRAIN
by OMMA office

PLACE: Breda
N 51°34'59"
E 4°46'37"

ARCHITECT: OMA
YEAR: 1996-2002

DIMENSIONS:
74x60 m footprint
46,000 m³
10 stories
144 apartments
6 shops

STUDY OF THE ACTUAL SITUATION

first floor plan
third floor plan
fifth floor plan
seventh floor plan
access floor plan
second floor plan
fourth floor plan
sixth floor plan
MATERIALS:
Galvanize steel
Clad in Wood veneer
Glass boards
Expanded aluminium sheet
VOLUMETRIC STUDIES

LOGITUDINAL SECTION

TRANSVERSAL SECTION
EXISTING - PROPOSAL

SIZE
Block internal court
All the parts of the block has different size

DENSITY
Area plot: 5883 sqm.
Floor area: 22500 sqm.
Units: 144

CIRCULATION
1 elevator unit
1 staircase per unit

TYPOLOGY
Court typology
Connection with an internal courtyard
Corridors to enter to the dwellings

ORIENTATION
Each building has different orientation SW/NE NW/SE

COMMON SERVICES
Parking (123)
Entrance, store rooms, dwellings

TERMAL GAINS
Non

PROPOSAL
Two blocks building connected in the central part.
Visual connections

Area plot: 7216 sqm
Floor area: 19657 sqm
Units: 138

CIRCULATION
2 elevation units
Staircase per unit

TYPOLOGY
Aligned buildings
Dwelling connection with perimeter passarela.

ORIENTATION
Two blocks with the best orientation SW/NE

COMMON SERVICES
Parking (124) - storage rooms
Entrance, storerooms, commercial areas, bike racks, green areas

TERMAL GAINS
Solar panels on the roof
Solar protection on the SE facade
Cross ventilation
balconies, allow the users

PRIVACY-CONFORT

visual connection &

PUBLIC SPACES...

taking advantage of the materials

STRUCTURE...
SUSTAINABLE APPROACH

All around the world, many strategies to saving energy had been developed, during this specialty, we as a students try to develop different proposal over a building already built.

The project is from OMA office, the specialty works in the project located at Breda, with a different solution than at the construction proposal.

The developed analysis, let us know how the building works, the shape, size and form, this particular proposal consider two things over the original project, the first is that the transformation of the shape is linked to the different climate, in order to save energy and also give to the users wellness and a high comfort quality.

Today the architecture, must be SUSTAINABLE, using the natural external conditions, to have different strategies like, cross ventilation, saving energy for the heating and cooling according to the season, manage the consumption of water.

During the development of the proposal was important to make a deep research about MADRID and DUMONT, looking for the optimal conditions, materials and references that can let to the proposal offer high level on the final solution.
Phase 1. Typical close block

Phase 2. Open the ground floor orientated on S in order to permit in summer a natural ventilation taking in advantage the dominant warm winds.

Phase 3. Reduce the W facade surface turning on the top the volume. We increase the south facade and the height of N volume. We stop the winter winds from N.

Phase 4. According with the two different inclination of the sun between summer and winter we change the dimension of the volume from the top floor to the ground-floor.

SHAPE
Madrid - Spain

Phase 2. We open the block from the NE side and the SW side to permit the wind passing through. We reduce the depth of the strip building and also the distance between them.

Phase 3. Creating holes in the principal facade and lift up the building in order to favourite the cross ventilation.

SHAPE
Madrid - Spain

Dumont- Brazil

Phase 4. Creating a new layer with a soft facade that allow to decrease the temperature of inside volume.
TILES TYPOLOGY

1. STEAL STRUCTURE
2. AIR CAMERA
3. GLASS WALL
4. WINDOW

MATERIALITY- SPAIN
Ceramic Tile cover
1. STEAL STRUCTURE
2. EXTERNAL FONDATION OF THE LIGHT METAL SYSTEM
3. METAL ANCHORANCE

MATERIALITY- BRAZIL

Textil

Cubic Tech's non-woven fabrics contain thinly spread mono-filaments of high tech fibers such as Dyneema®, Vectran®, Aramid, Zylon® or Carbon. Specialty coatings encapsulate and protect the filament layers which are organized into multidirectional reinforced panels. The fabrics have excellent resistance to delamination.
SUSTAINABLE STRATEGIES

Dumont - brazil

**DAYLIGHTING**
1. OVER HANG
2. VEGETATION. Leaves block the summer light
3. LOUVERS. Blocks summer light
4. SCREEN. Diffuses light and views

**VENTILATION**
1. CROSS VENTILATION. Maximum performance when inlet and outlet are placed at diagonal in both plan and section

**Summer**

10.00 a.m 12.00 a.m 17.00 p.m

**Winter**

10.00 a.m 12.00 a.m 17.00 p.m

**Summer section**

**Winter section**
Summer solstice 21 June 74°
Winter solstice 21 December 45°

1. STEAL STRUCTURE
2. GLASSING COVERT
3. GLASSING COVERT
4. MOVABLE ISOLATION OR BLACK PAINT
5. DAMPER

DETAIL TROMBE WALL

SUSTAINABLE STRATEGIES
Madrid - Spain
Architecture tries to improve the quality of the inhabitants, but sometimes it is important to read and understand the real needs of the users.

Study the favelas was a challenge, because life is happening at all the spaces, but analyze the external condition and make a proposal which consider all the scale of design.

All the projects divided in five main parts, the intervention where remove the houses, measuring the risk and materiality as a starting point.

At the internal structure of the favela the objective was improve the quality of life, giving to this area, plazas, public open areas where they can develop social activities.

The circulation system plays an important role, that’s why in the proposal it is divided according to the hierarchy of use and available area.

The intervention offer new units to the neighborhood and an ecological promenade along the river where different activities appear, it proposal consider the river as an opportunity, that adds value to the proposal.

Specialty director: Ma Teresa Diniz
Assistant: Belen Gesto
Marion Katscher
Guest: Reine Hehl
ANALYSIS OF THE AREA

RIVER ZONE

River

Favelas
ANALYSIS ACTUAL SITUATION

RISK AREAS

- Risk level 2 (creek)
- Risk level 4 (creek)
- Quality of material
- Favelas
- Creek
REMOVAL

PROPOSAL

- Creek risk
- Reburshiment
- No access
- New Street
- New project
AREA_1

= muti use areas
= green spaces
= housing project
PROPOSAL HOUSING TYPOLOGY

Tipology A

Tipology B

Transversal Section
Accessibility for the favelas

\( A_3 \)

\( \text{AREA}_3 \)

- \( \text{H} \): housing project
- \( \text{G} \): green spaces
- \( \text{MU} \): multi use areas
- \( \text{S} \): small shops
- \( \text{T} \): trash collectors

\( \text{TRANSVERSAL} \_\text{section} \)

\( \text{LONGITUDINAL} \_\text{section} \)
CREATE A MODULE

The size of the streets should consider the user, and bring accessibility to the area.

Each one of it, can offer different sensation, activities and the develop of these new internal streets helps to improve the public and private transportation, and also provide safety areas to the pedestrians.

CIRCULATION TYPOLOGY

- pedestrian
- motorcycle
- vehicles

= muti use areas
= green spaces
= housing project
= small shops
= trash collectors