SOCIAL HOUSING WITH POSSIBILITIES FOR A PERSONALIZED HOUSING
PROPOSAL FOR A IMPROVEMENT OF LIFE QUALITY IN MANGRULLO, ROSARIO, ARGENTINA
- 1,300,000 inhabitants
- 178km² surface (half of Stockholm)
SITE ANALYSE: TOPOGRAPHY

FLAT TOPOGRAPHY

TEMPERATE CLIMATE
SITE ANALYSE: SUN RADIATION

SUN RADIATION FROM THE NORTH.

30° angle WINTER

60° angle SUMMER
90 “INFORMAL SETTLEMENTS

100,000 PEOPLE LIVES TODAY IN IRREGULAR SETTLEMENTS

200,000 HAVE UNSATISFIED BASIC NEEDS
LOCATION SHANTY TOWNS IN RELATION TO PUBLIC LAND (RAILWAY SYSTEM)

- public land as old train installations
- lots with low value
- floodable areas
- industrial lots without use
LOCATION SHANTYTOWNS IN RELATION TO FLOODABLE AREAS

- shanty towns
- social housing
- floodable area
ORGANIZED BY THE STATE TO SOLVE HOUSING DÉFICIT

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OPPORTUNITY TO OWN A LAND AND A HOUSE

THEY GET A LOAN THAT SHOULD BE PAID BACK TO THE STATE IN SMALL QUOTES

SOCIAL HOUSING SYSTEM
SOLUTION: SOCIAL HOUSING

Located in the periphery of the city
Far from jobs opportunities
Far from the city
SOCIAL HOUSING PROJECT IN ROSARIO
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SOCIAL HOUSING PROJECT IN ROSARIO
people living in precarious conditions without services (as sewage) surrounded by garbage:

bigger percent of sicknesses and higher rates of epidemic cases.
CONCLUSION FROM SOCIAL HOUSING REFERENCE STUDY

LOCATION
- close to the city

PUBLIC SPACE
- greenery and different planned functions and activities where people can gather

TYPOLOGY
- INDIVIDUAL HOUSE
  - flexible (can expand)
  - recognition of roles (maintenance)
  - costs for maintenance
  - coexisting

MATERIALS QUALITY
- Quality in materials so that the project can be permanent.

FLEXIBILITY
- Flexibility in the typology so that different groups can occupy them (families are different in sizes).

INDIVIDUALITY
- Projects with diversity of dwellings and details, different facades or just different terminations are the ones that today have increased in value and are best maintained.
“El Mangrullo” is located in the south district of Rosario. It is surrounded by rivers and streams. By the east leads with Paraná river, by the south with Saladillo stream and by the west with Mangrullo stream.

The neighbourhood was settled by its inhabitants for 150 years ago but still doesn’t appear in the city map.
Constituted by 200 families.

90% live in very precarious houses.

The homes are constituted by 4 to 9 people (parents, children, grandparents, others).
Houses materials:
- Metal sheet
- Wood
- Cardboard
- Plastic
- Bricks
The inhabitants of the neighborhood “El Mangrullo” are old workers in the slaughter houses of the area, which today, many of them are closed. Today the people in the neighborhood work mostly in the exploitation of the river:
- fishing,
- otter hunting,
- fish sale
- animal breeder
SITE ANALYSE: INHABITANTS

Net builders,

Boat producers
SITE ANALYSE: INHABITANTS

cardboard and garbage recolector for sale.
There are also new groups of **enterprising women**, that with help from the state are starting their new small companies on production of toys, clothes, cleaning products and others.
WATER SUPPLY: water is supplied from common taps and stored in plastic tanks. There is no installation for tap water in the houses.

SEWAGE: There is no sewage in the neighbourhood. Some houses have septic tanks and some of them have just a pipe running towards the stream. Waste water from washing is thrown outside in the garden.

GAS: gas is used in Argentina for cooking and heating. In Mangullo there is no installation for gas so people buy gas cylinders.

ELECTRICITY: is connected illegally and very poorly by the same neighbours. The connections are bad and very dangerous.
As the neighbourhood was created by its inhabitants, so was its connections.

There is one main asphalted street that connect the site with the next neighbourhood.

The rest of the connections are of soil, which are impossible to go when raining.
SITE ANALYSE: EXISTING PUBLIC SPACES

1 futbol field

Place to play futbol, a very popular activity in the argentinian community.

When kids are not playing futbol, horses are grazing in the field.

When kids are playing, horses are taken to the side of the field.
SITE ANALYSE: EXISTING PUBLIC SPACES

The club is used by the coast by some fishermen.

By the park side is used as a playground with its abandoned structures and by the horses that graze also there.
shore of Mangrullo stream

Used by the fishermen to access to their boats and as parking for them as well.
GOVERNMENT INTENTIONS FOR THE SITE

“-La rehabilitación de los barrios del sector Costa Alta Sur
-El traslado de los asentamientos irregulares, teniendo en cuenta la opinión de los vecinos. La liberación del espacio y ocupación inmediata con otro uso.
plan@del@distrito@sur- Municipalidad de Rosario

“-Rehabilitation of the South Coast Neighborhoods

-Transferal of irregular settlements, taking in account the opinion of the inhabitants

-Release of the space and immediately occupation for other use.”

South district plan- Municipality of Rosario
BUT...
the neighbourhood is 150 years old, which means that, PEOPLE HAVE BEEN LIVING THERE ALL THEIR LIFES:

THEY HAVE THE RIGHT TO OWN THE LAND (after 20 years living in one land, this one belongs to you).
For all economics activities the cercanity to a route is very important.

In this case in particular, where big part of inhabitants are fishermen, the importance between the cercanity to the route and to the river is key to their good economy.
proximity to infrastructures (services as sewage, water, gas) will reduce the cost for the connection in the site.
AIM

Give a **better quality of life** to the people living in the slum of “El Mangrullo”

**Organize the space and the connections** taking in account the existing connections and the way the neighbors move in the neighborhood.

Introduce **infrastructure** for the neighborhood (sewage, electricity, water, gas).

Create **public spaces** in which the neighbors can gather. Formalize the existing ones.

Create a typology of **housing** which:

- Relates to the place where is going to be build and the people who is going to inhabit it.

- It is flexible enough to be transformed and expand.

- It is flexible enough so that it can place economical activity.

- Costs as much as a social house costs today: 20,000 USD= 81,000 pesos.
STEP 1: CONNECTIONS
STEP 1: CONNECTIONS

Formalize exiting connections by keeping their actual use and traffic density.
STEP 1: CONNECTIONS
VISION: MAIN STREET

Section of a the main street.
Grass blocks are concrete blocks with holes where grass can grow through.

It is able to use in streets with small amount of traffic and parking spaces.

Produced locally.

Cheaper than asphalt street.

Easier to collocate.

Porosity is maintained.
Section of a minor street.
STEP 2: PUBLIC SPACES- LOT DIVISION- SERVICES
Vegetation in the site is very important in order to reduce the pollution from the surroundings harbours. It also helps to prevent floods.
**STEP 2: PUBLIC SPACES-LOT DIVISION**

**PROCESS: VEGETATION**

- **Eucaliptus globulus**
  - Is an evergreen tree that can grow from 30m to 55 m tall.
  - Capacity to absorb tremendous amount of water from the soil through the process of transpiration. They have been planted in some marshes to reduce the water level and eradicate plagues.
  - However, its leaves of the plant are combustible, so they will have to be replaced with time. The possibilities are jacaranda tree and ash tree which are two trees that produce big amounts of shadows in summer.

- **Weeping willow**
  - Evergreen tree that can grow up to 25 m high.
  - The leaves can be used as analgesic and antifebrile.
  - It can be used to cure injured or burnt skin or as anti-inflammatory.
STEP 2: PUBLIC SPACES-LOT DIVISION
PROCESS ZOOM IN
STEP 2: PUBLIC SPACES-LOT DIVISION
PROCESS: DEFINE PUBLIC SPACES
STEP 2: PUBLIC SPACES-LOT DIVISION
PROCESS: DEFINE CONNECTIONS WITHIN THE BLOCK
STEP 2: PUBLIC SPACES-LOT DIVISION
PROCESS: DEFINE THE INNER BLOCKS
STEP 2: PUBLIC SPACES-LOT DIVISION

PROCESS
STEP 2: PUBLIC SPACES-LOT DIVISION
PROCESS: DEFINE THE LOTS (looking at the existing housing location)
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PROCESS: DEFINE THE LOTS (looking at the existing housing location)

average lot size: 75m²

average house size: 35m²

two moduls for each lot: be able to rotate the lot in order to get access

a modul that is able to hold 4 spaces of 9m² (typical size for a room in Argentina)
STEP 2: PUBLIC SPACES-LOT DIVISION
PROCESS: LOT DIVISION PROPOSAL PLAN
SERVICES (sewage, running water, electricity)
Generate a space for a temporary market (where the new enterprisers can sell their things), which can be also a place for expositions and others functions.

Create continuous playground so that the children in the area can play.

Create spaces for people to gather.
STEP 2: PUBLIC SPACES-LOT DIVISION
VISION: TEMPORARY MARKET SQUARE
STEP 2: PUBLIC SPACES-LOT DIVISION
VISION: CONNECTED PLAY
Keep the fotboll field.

Create spaces by the side for spectators, which can be used as playgrounds as well.

Today the futbol field is used to feed the horses from some families. I will keep this activity as it is and create shelter for them.
STEP 2: PUBLIC SPACES-LOT DIVISION
VISION: FOOTBALL FIELD
STEP 2: PUBLIC SPACES-LOT DIVISION

VISION: FOOTBALL FIELD
STEP 3: HOUSING
STEP 3: HOUSING
TYPOLOGY DESIGN

AVERAGE HOUSE SIZE: 35m²

HOUSE/LOT PROPOSED

area: 38.5m²
exp: 72m²
lot area: 75m²
STEP 3: HOUSING
TYPOLOGY DESIGN

ORIENTATION
STEP 3: HOUSING
TYPOLOGY DESIGN

LOCATED IN A NON FLOODABLE LOT

LOCATED IN A FLOODABLE LOT
STEP 3: HOUSING
TYPOLOGY 1: EVOLUTION

GROUND FLOOR

FIRST FLOOR (terrace)
STEP 3: HOUSING
TYPOLOGY 2: BASIC UNIT

GROUND FLOOR

FIRST FLOOR (terrace)
STEP 3: HOUSING
TYPOLOGY 3: EVOLUTION
activities related to the river
activities related to commerce
others
education and community center
health center (existing)
STEP 3: HOUSING
GOVERNMENT FUNDS: FUNDATION
STEP 3: HOUSING
GOVERNMENT FUNDS: SAFE STRUCTURE- FIRE WALL
STEP 3: HOUSING
GOVERNMENT FUNDS: SAFE ROOF
STEP 3: HOUSING
GOVERNMENT FUNDS: TEMPORARY WALL
1- wall construction:
190x190x390mm concrete blocks filled with perlite ore

2- wall construction:
200 mm concrete
300mm plastic foil insolation
200 mm gravel

3- 40mm translucent polycarbonate plate fixed to galvanize steel sections

4- floor construction upper level
50mm corrugated steel sheet metal, load bearing
180mm steel I-beam

5- roof construction:
39mm corrugated steel sheet metal
60mm thermal insulation, glass wool
60mm thermal insulation, rock wool
plastic foil
39mm steel metal sheet
180mm steel I-beam

6- 50mm temporal plywood wall
“A COMMUNITY DOES NOT TRANSFORM ONLY WITH INSTITUTIONS OR GOVERNMENTS, BUT WITH THE STRENGTH OF THE PEOPLE WHEN THEY DISCOVER THAT THEY CAN DO THINGS WITH THEIR OWN HANDS.”

Architect Eduardo Jorge Anzorena.