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Master of Science in Architecture (Construction)
Honors theses

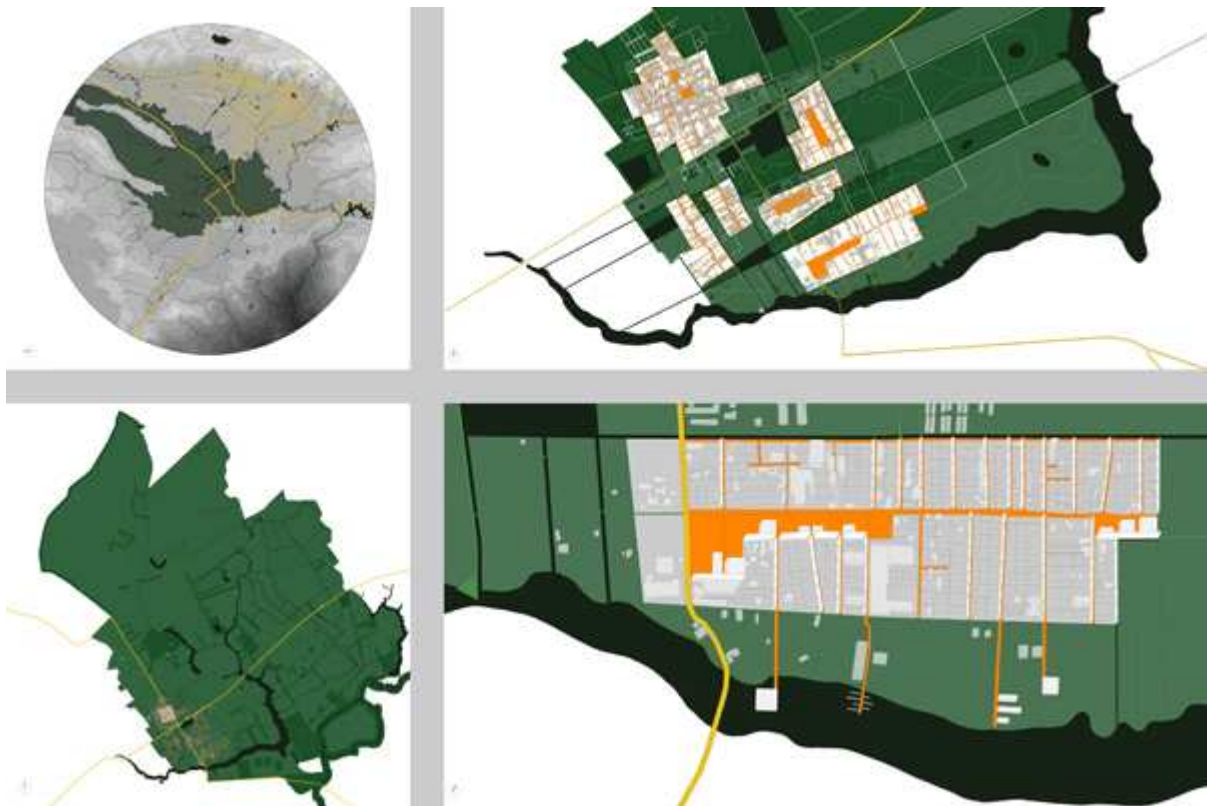
FUNZA, BOGOTA' SABANA CENTER. Social housing design

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The graduation thesis project made use of the “New Polytechnic Grid” method, developed by the Professor Giancarlo Motta (<http://frigo.polito.it:8080/grid>). It started analysing and designing some maps about Bogotá Sabana territory. The maps have been drawn as research work and they are “maps oriented to the design”. The maps show in a single plan both natural elements and built elements.



The maps. From left corner counterclockwise: Sabana territory; settlements and roads in Sabana reclaimed lands; thematic map, the wall as interpretation of distribution element rule

The social housing architectural design in Funza, town in the Bogotá Sabana centre, plans low cost dwellings construction in some “lagoon islands” in the communal district.

The distribution issue has been the design starting point. The wall is the architectural element that translates the distribution, both regarding the whole island and every single city block and finally every single dwelling. Therefore the wall has a vital importance in the design.

The wall holds the distribution, both pedestrian and plants paths, from territorial to single dwellings scale.

The social housing concept considers that every dwelling can live independently one from another. Every single unit “lives” its own independence. The high flexibility concept gives to the dwelling different solutions. An important role for the decisions of these solutions is given by the customers’ active participation.

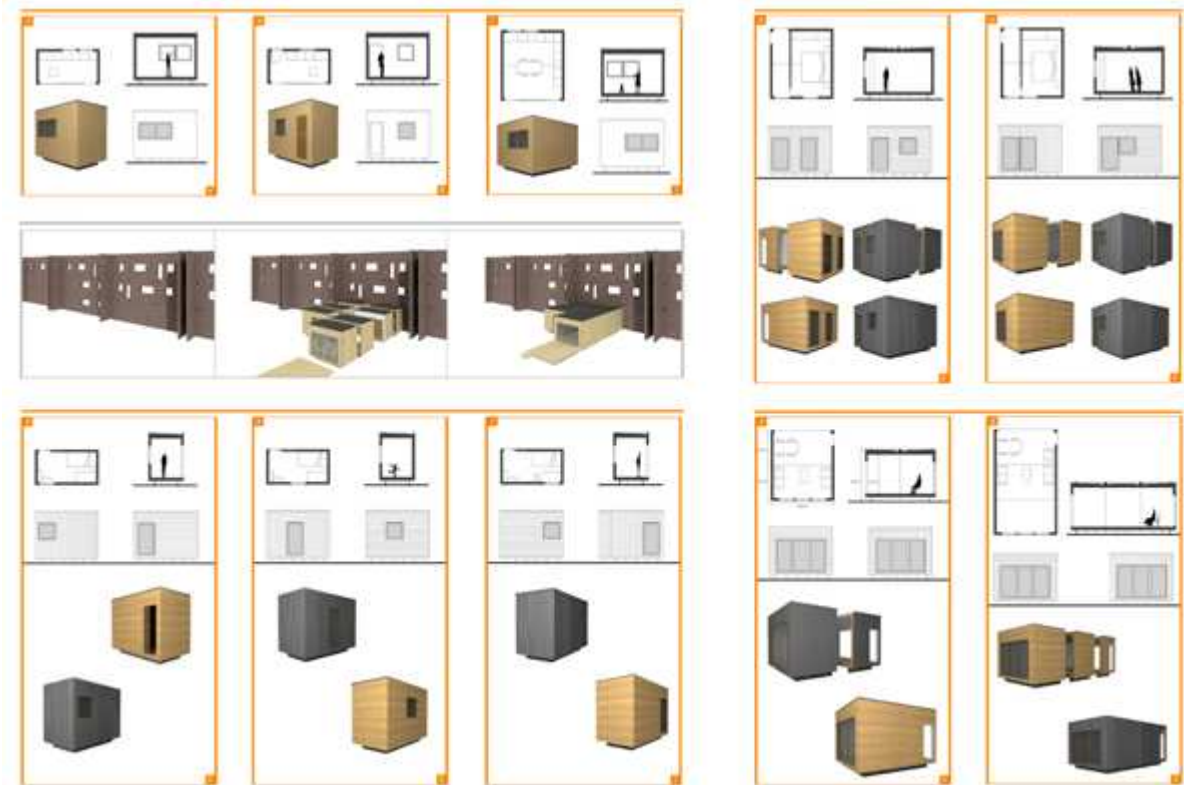
Every dwelling has to “born” adjoining the wall. Entrances, bathrooms, kitchens, have to be strictly connected to the wall. The reason of this is that the dwellings can use all the plants holded in the wall. These are the only constrains. The wall is made in local bricks.

The walls height is appropriated to be able to supply three dwellings floors. The solution respects zoning laws and construction systems as precast wood modules.

On the road side there are some little walls which sign the vertical paths: elevators and stairs. Some semi-public balconies are designed and they are attached to the wall as cantilevers.

Walls are designed with the maximum number of openings, windows and doors. That is in function of a possible modules attachment to the wall.

Another design phase has been the elaboration of a “catalogue”. The catalogue shows the modules of all dwellings internal spaces: entrances, bathrooms, kitchens, single and double rooms, living rooms, duplex and balconies.



The dwelling spaces "catalogue" with an example of cells assembly to the wall

The idea pursued in the design is that every user can choose from the catalogue the rooms for his own dwelling. Potentially in the future the user will be able to add some rooms adjoining to the existing core.

Every module is prefabricated and assembled on site. The cells have been designed in order to be carried on the roads with not exceptional transport. Therefore the dimensions are: 3 metres width per 4,3 metres length per 3,2 metres height.

The cells bigger than transportable dimensions are divided in more modules, with a maximum of three parts. They will be assembled on site.

A city block has been studied in order to give an example of the assembly possibility of the cells together.

The ground floor dwellings have a direct access to the private garden and/or vegetable garden. The first and second floor dwellings access to their own gardens, positioned after the ground floor ones, through a ramp, which is connected to the wall.

Every dwelling with its own garden is divided from the others by low wood and brick walls.

In correspondence to the divisions lots there are some walls, which work as buttresses of the main wall.



Project views

In conclusion the thesis aim has been to give back to Funza city its own historic central role. It has been confirmed by the thematic maps and by designing the new maps.

In the project it has been followed an architecture in the service of man concept. It is an architecture always careful to material needs and even to a possible user requirements.

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