POLITECNICO DI TORINO
FIRST SCHOOL OF ARCHITECTURE
Master of Science in Architecture (Construction)
Honors theses

Focus on the nature: project for a possible residential neighborhood located in Bolzano, in depth analysis on effect of parietal vegetation

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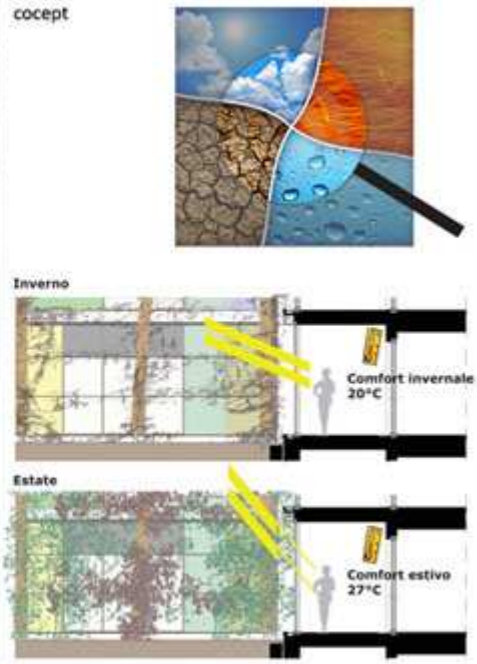
The project of thesis "Focus on the Nature" it concerns the planning of a district residential site in Bolzano. The particular characteristics of this city, tied up to the citizenship of the place and the customs of his inhabitants, they have driven the idea of project of the district, deeply rooted in the surrounding landscape.

planimetria

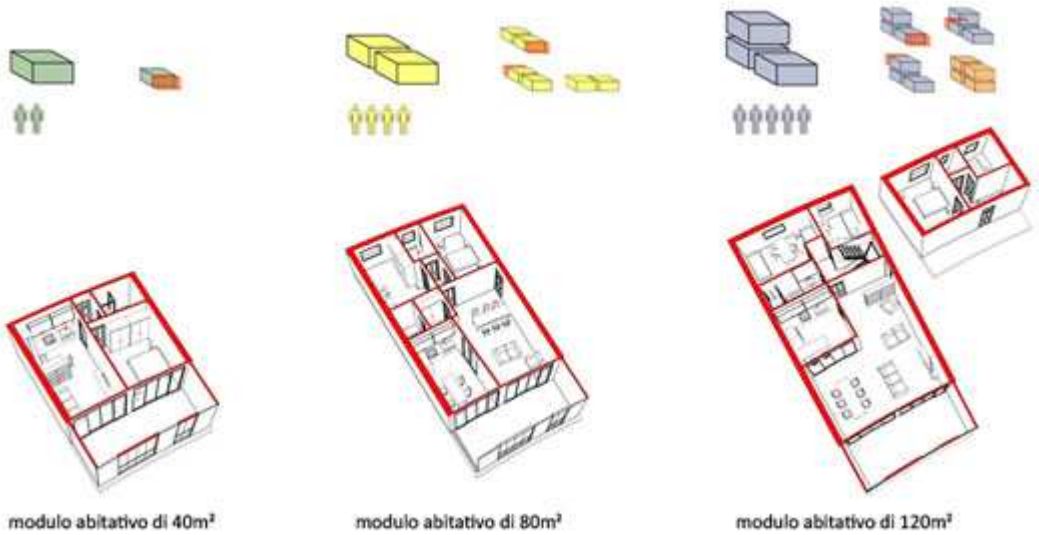


comportamento del rampicante in regime invernale ed estivo

The water, the runs, the vegetation and the preexistences for the planning of the building and the park are used for getting an area to strong natural value, enjoyable from his own inhabitants and a residential complex to the state-of-the-art one from the energetic point of view. The thesis articulates in three phases:

1- the planning of the park;
2- the planning of the residences;
3- the search conducted on the wall green.

The project idea, as it suggests the title of the thesis, it is born from the concept: as a lens picks up the light and focuses it in a precise point, so the building and the park pick up the citizenship of the place for "to focus it" in the district. The context really enters the district as they were bright bundles, but translated in "functional strips." Them, with proportional ampleness to the housing forms, they penetrate inside the park acquitting uses and functions. The waters coming from the preexisting channels of irrigation, you add to the meteoric waters, they are used for the irrigation of the park and to feed the net of herbal purification. The road conditions inside the district is exclusively pedestrian and bicycle, in synchrony with the habits of the bolzaninis, limiting the access of the motorcars to the alone entries of the buried parking places. The strips of vegetation differentiate him in: dense wood, urban planting, lawn of district, fruit trees, urban gardens. The different functions are guaranteed from the orders of plant of the masting. The dense wood, is for example compact, composed by hedges and trees with thick foliage fit to screen the wind coming from north or the noise provoked by the railway line.



The residential complex is characterized by a multilevel and semicircular building that contains the park and from buildings shed single-family in the park. All the lodgings, in total 125, have I lean out on the park. Introduces in operation different cuts of the lengths and the number of people that they will live it. The basic form is of 40m^2 for 2-3 people; its multiples constitute the greatest forms. Some of these have the possibility to lengthen toward the park or toward the mountains, to north, with the purpose to draw a vain additional and to articulate the prospectus.

The prospectus to south introduces him light and colored toward the park, to recall the colors of the nature, while to north it is compact and hard as a mountain.
The energetic objectives are established to reach the class To plus of ClimaHouse. Insofar in combining to the initial concept a series of energetic concept is placed side by side as strategies applied to the building:

1- solar exposure;
2- greenhouses bioclimatiche (every lodging has at least one of it);
3- climbing plants to screen the summer solar radiation;
4- self-bearing terraces;
5- natural light;
6- aerodynamics of the wrap;
7- you raise performance energetic of the wrap and of the constructive systems;
8- eco-compatible material;
9- differentiation of the treatment of the wrap on the base of the exposure;
10- management of the refusals;
11- the waters' management;
12- Renewable sources.


vista sul prospetto a sud dal parco interno


vista sul prospetto a nord dalla campagna

This has allowed to calculate contributions and dispersions for getting into proportion the fittings of heating and conditioning, the necessary quantities of solar panels and photovoltaic panels and the thicknesses of the insulators of the perimeter walls to avoid condense and to favor the thermal inactivity. Such strategies reflect him on the quantity of produced CO2, getting good results in comparison to the indexes of the Protocol Itaca, ClimaHouse and R.I.E.

In last the search on the wall green, conducted with the D.E.N.E.R. (Polytechnic of Turin), It is allowed to plan an effective screening of the solar rays and to foresee the value of the temperature of the surfaces of the external walls. The reached advantage is that of a smaller temperature to condition in the residences in summer regime.

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