

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

Eco-urbanism in district rehabilitation

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Cities do not necessarily represent an unsolvable problem for a sustainable planning of life- they can even be part of the solution.

"The future can not be predicted. But you can prepare it" (Oriol Nel- lo)

The aim of an Eco-urbanism approach is not to create a new residential urbanization, or simply to add some ecological aspects to an existing one, but to reduce waste, using the existing built and urbanized heritage.



Masterplan Bon Pastor

Referring to it, I took advantage of the Bon Pastor's competition to give my own interpretation to the remodeling of the district according to the principles of Eco-urbanism.

The district that achieves a self-sufficiency in energy supply, a good reuse of rain water and wastes on local level is proposed.

Project approach, in line with the parameters that have historically governed the growth and the district evolution, is focused on energy, water, wastes, mobility, social inclusion, etc.

Strategies that accomplish the exposed objectives are:

- Creation of a new equilibrium among the built-up and the free areas.
- Careful consideration about the density of the buildings in the district.
- New relation among the different uses of the territory shortening the mobility.
- New relation among the different uses of the new and existing buildings
- Direct relation between the energetic strategies of the district and the evolution of the individual houses.

All these objectives can also bring good connections between the adjacent neighborhoods and the city with its surrounding area in general. Moreover it will represent an health improvement for its inhabitants.

The designed parking is to increase the pedestrian orientation and to minimize the adverse environmental effects of parking facilities. For all the non-residential buildings and multifamily residential buildings that are part of the project, the parking lots are located underground, at the side or rear of buildings, leaving building frontages and streetscapes free of parking lots on the surface. Every new building will be provided with an underground parking lot which will be accessible for all its inhabitants.

The parking lot under the Green Corridor is reserved for those who live in the Casas Baratas: everyone will have his/her own garage.



Casas Baratas

Project description

The idea is to keep the present urban structure characterized by a strong communal factor. Streets are places of cohabitation and socialization for the people who live in these houses, creating links and pacts inside the different blocks: community and individual life coexist

The memory of the Casas Baratas is found in urbanism and in the choice of keeping part of the existing building. Specifically, the interior which overlooks the yard is kept, but with the appropriate structural and technological modifications.



Sustainable Strategies

Sustainable Strategies of the district rehabilitation

The sustainable district and individual house approach coexist and they are inseparable. Permeability, photovoltaic and rainwater re-use of the neighborhood are reflected in the editing of individual Baratas Casas, which will be designed from an energy demand, supply and growing global economy.

The Bon Pastor land is full of ground water and this makes the surface very humid. As regards the Casas Baratas, as we have already said, the problem was solved through the "forjat sanitari", which was abandoned in time because of the incorrect use the inhabitants made of it.

For this reason I thought of exploiting this “problem” as a starting point in planning. Inside the area we create a “humid landscape”, that is zones inside the green area in which, through the use of wells, we extract water from the ground, thus creating a sort of small “lake”. The humid zones allow a high cooling potential during the summer and a renewal of the ground itself.

On the architectural level, I thought of a groundwater heat pump. Two drillings are usually necessary: the first leads the water into the heat pump, while the second conveys the water back into the ground. The water which was used for this exchange is sent in the areas of cooling of the small lakes.

The exchange happens at a superficial level and this reduces the costs of this system. This exchange guarantees the possibility of cooling and heating during the whole year, day and night.

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