POLITECNICO DI TORINO
SECOND SCHOOL OF ARCHITECTURE
Master of Science in Architecture
Honors theses

Urban Requalification of Tulum, Mexico. Studies for new housing types for a sustainable landscape

by Stefania Fattori
Tutor: Paolo Mellano
Co-tutor: Irene Caltabiano

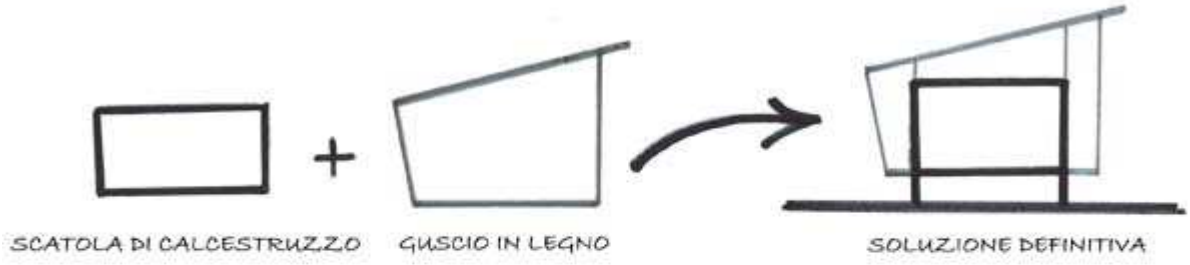
The work began after a period of study, carried out on site, about the city of Tulum, Mexico, a tourist destination known both nationally and internationally.
Critics of the plan, the subsequent analysis of the road system, the relocation of functions and classification of existing building types, have resulted in my thesis project.

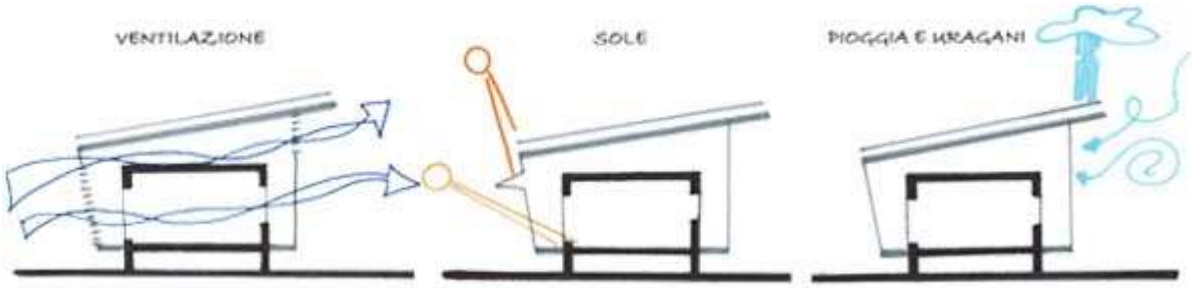
The stages of the evolutionary process are basically three: the one on the macroscale, the Masterplan, and those of the block and then of the building.

The result wants to propose a fundamental concept: the comfort can be guaranteed, both at the city level and at the building one, with very simple technology, using local materials and through the exploitation of the natural resources, In fact, taking a cue from the traditional and exploiting the potential of the environment, it was possible the creation of an eco-sustainable neighborhood.

Proposal for a new sustainable urban expansion

The types of houses that I have suggested have a structure consist of concrete pillars with hollow blocks buffered in the same material; that's because, although it is not properly suited to the tropical climate, is a local material, inexpensive, readily available, known by the local workforce and durable.
Given the hot and humid climate needed a pitched roof too dissipate heat before it reached the interior and to this and I chose to cover the concrete box with a wood cabinet, a second membrane, which has a single pitch leaning towards the south.
Also to meet the climate requirements of the building is raised so the air has a greater circulation and avoids direct contact with the earth and the insect.





Study of form and bioclimatic

This shell is supported by wooden pillars and buffered by strips which work as screens. The dark location vary from building to building but with a constant: most numerous in the south and west elevation, where is require more protection, and less dense to the north and east. It creates alla round the building a covered balcony where people can relax in the shade and where, tank to the protective shield, they can enjoy their privacy.
This second membrane was fundamental for the following reasons: to avoid the heat hits the surface of the building, it was not the coverage itself so it don't need expensive technology, is made of wood which is a local material so easy to find and processing, suitable to the climate and inexpensive.

The project follows a view of the minimal environmental impact by adopting strategies, solutions, technologies and materials under local vernacular architecture and contemporary architecture, learned as a result of an investigation into the environmental and socio-economic impact of Quintana Roo.
In particular, the response to the context of Casa Maya, has been a source of inspiration especially with regard to some of the solution used on the natural ventilation and cooling of the interior. In summary we can say that:
The elongated shape of the buildings makes better use of ventilation through, without the aid of air conditioning system.

The buildings are arranged in ways that benefit the summer winds from the south-east.
The short side of the building is placed towards the south to ensure that the minimum surface is oriented toward the warmer areas.
I propose local materials: wood, concrete blocks, steel industry;
The structure is light and flexible.

Proposal for new housing types

For further information, e-mail:
Stefania Fattori: stefi.fattori@gmail.com