POLITECNICO DI TORINO

Honors thesis

DEGREE IN MASTER OF SCIENCE IN ARCHITECTURE (CONSTRUCTION)

Abstract

BUILT-ON. Upgrading the ITEA social housing heritage. Elevation of the residential complex Brione at Rovereto

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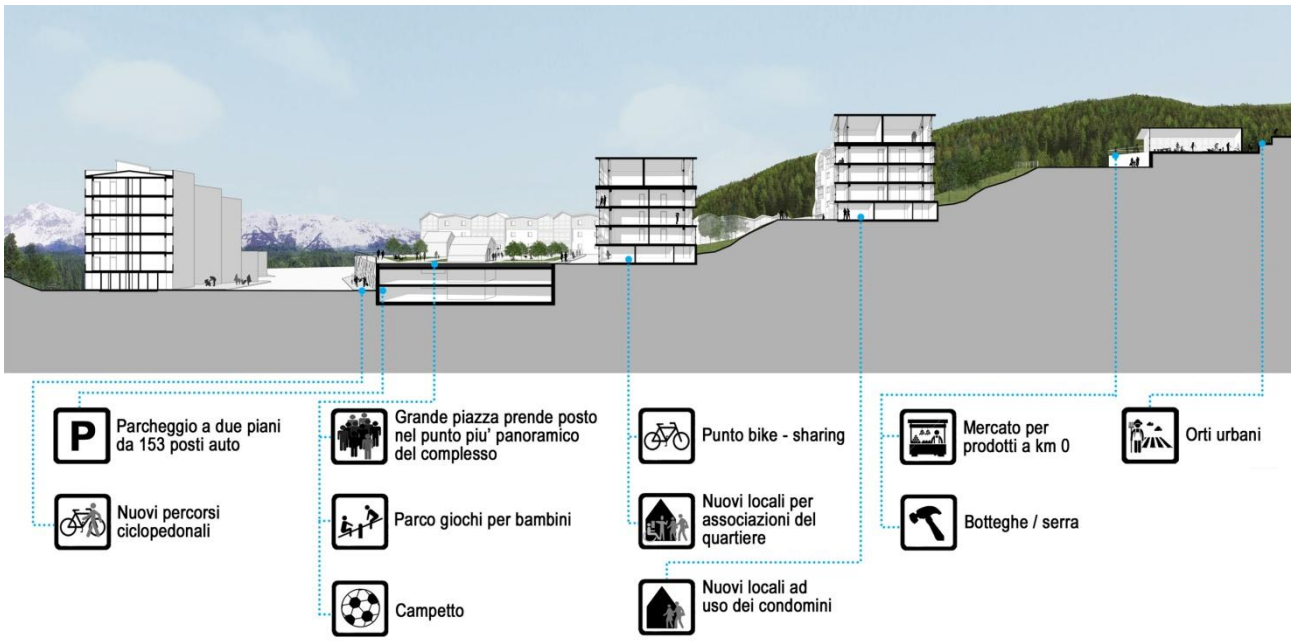
Always more frequently, in the recent years, the topic of the conservation of the resources is becoming a central theme in the architectural debate. Specially, the European schedule highlights two problems: the first one is the soil sealing and the second one is the waste of energy. The afterthought of the existing building heritage represents a possible solution for both the two problems.
Starting from these considerations, this thesis is intended to propose, in the first section, a deep survey on the existing building stock, in order to identify any efficient and cogent strategy. In the second section, instead, this thesis is intended to resolve the specific case of the Itea-Brione residential complex, in order to make a reflection about the Itea heritage. In the first chapters is shown the efficiency of the requalification's strategy, through an accurate analysis of data, the study of the programs and of the european best practices. This strategy is often linked with the choice of the extension of the buildings by elevation. Moving the attention from the international matter to the local case of the Trentino Alto Adige, this topic is enriched by specific and complicate dynamics.
The question we have to pose is the following: what we can do into a fragile territory, characterized by soil's scarcity, where a proper use of resources has always represented the unique achievable choice? Lots of actions have already been started in order to commence virtuous processes on the existing building stock. The sixteen projects described in the thesis are an example of this new philosophy.



Perspective section of the area, in which are underline the main aspects of the urban's project.

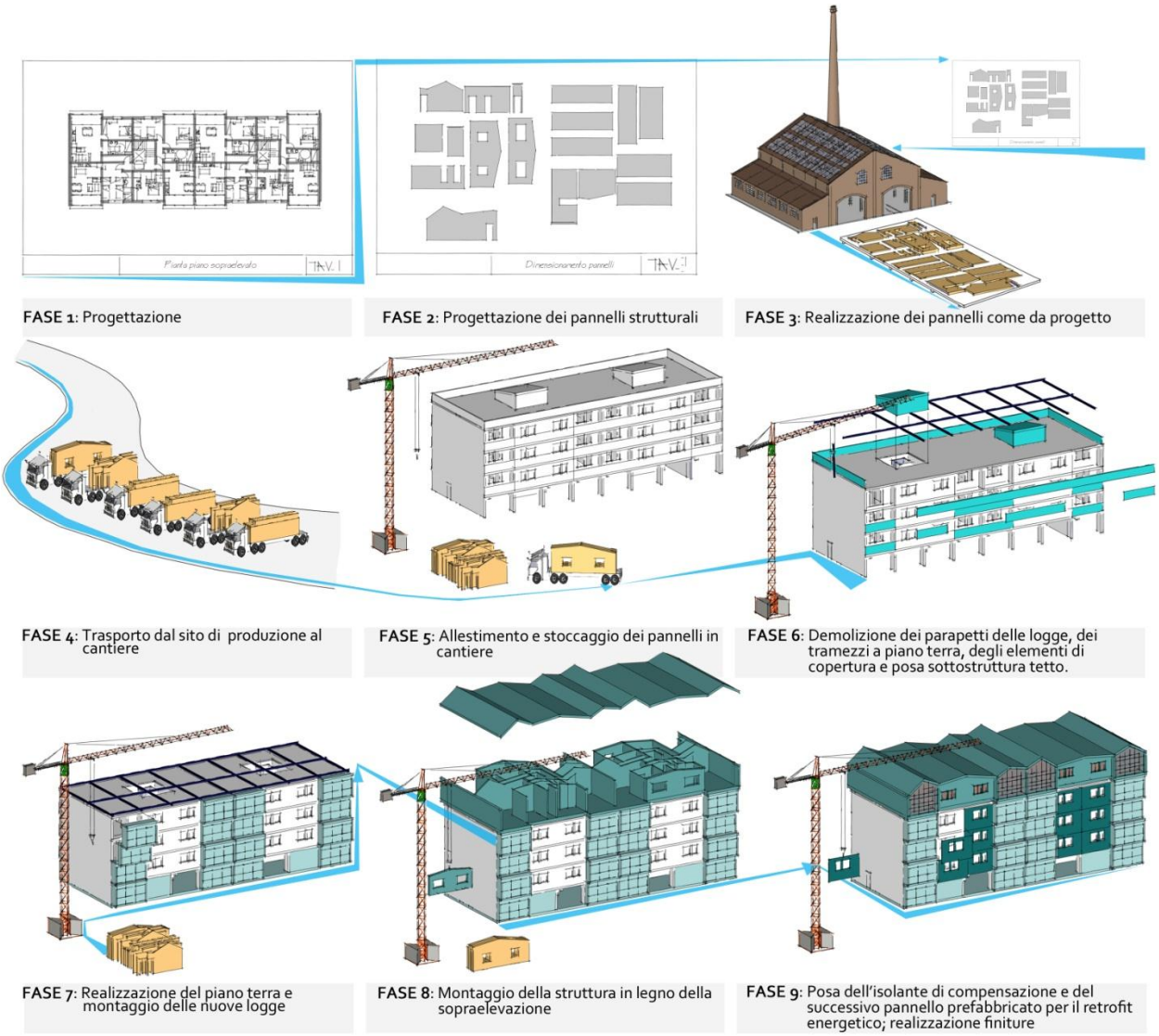
This is the context in which the refurbishment's project of the Itea-Brione's complex is placed.
The study of European and local best practices has been useful to address the central theme of the thesis. The necessity to design a solution for the two problems underlined by Itea: the need to create new social housing heritage, and the upgrade of the stock already in its possession. The Extraordinary Plan for social housing of 2006 forecasts that, every

year, the society should be able to guarantee a determinate number of accommodation, that amounts to 300 homes per year (2.101 new homes in the next ten years).
The project provides for 80 apartments to be built on the existent roof, that will be added to the 165 existing flats. These numbers show that the possibility to build on existing buildings is a real opportunity to resolve the housing problem underlined by the Extraordinary Plan.
Moreover, the project had to provide for the improvement of the complex, both in urban and architectural terms. One of the aims was to increase the social role of the residential complex in the district, through the creation of public spaces and squares, while a second one was the refurbishment of the building envelope and the renovation of the ground floor. As a result, the project wants to hold together different action plans, strictly linked each others, operating from the large-scale to the detailed one.

View of the residential complex from one of the new solar greenhouses: we can see the new parking lots (which have also the function of district's square),the realization of the elevation and the addiction of the new facade's elements for the retrofit.

In the last section the thesis pays particular attention on the matter of the prefabricated timber system, in the context of the Trentino Timber industry.
Through a comparative analysis, it became clear that this technology could have had lot of advantages: wood, and specifically crosslam, has ecological advantages (reduce CO2 emissions), structural advantages (lightness, earthquake and fire resistance), process advantages (a speed construction phase and prefab process) and, finally, energetic advantages.

Based on the multi-level approach, this work is intended to propose efficient solutions in terms of reuse, that can be applied to the specific case of the residential Itea's heritage.



The study about the timber industry and the crosslam system: the prefabricated process is one of the main advantages linked to the use of this system into refurbishment's projects.

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