



POLITECNICO  
DI TORINO

# Honor thesis

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COURSE OF SUSTAINABILITY DESIGN

*Abstract*

**Architecture of the school and innovation:  
from the analysis of typological models to the project  
proposal for Crespano del Grappa**

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This thesis is about school building in Italy, responding to the call of "#scuoleinnovative", a competition issued by the Ministry of Education, University and Research in 2016.

The thesis, which begins with the analysis of the most significant schools of the twentieth century, focused on some of the innovative primary schools of the twenty-first century, and, in the end, presents a proposal for a school located at Crespano del Grappa. The aim of this work consists in opening up a debate on the type of the school building.

The case studies, which include a redesign of the schools illustrated, show clearly how the evolution of the education building is not linear.

It would be reductive to analyse the building for education by focusing only on the compositional aspect, because the influences in a complete design work are more than one. The space for learning, according to recent ideals and research, should develop all five senses, especially the tactile one for children, and, for these reasons, environmental comfort is very important; lighting, acoustic and thermo-hygrometry are significant aspects of the building's design.

Secondly, it's essential to consider that schools are becoming more and more containers of sociality, which include not only the relationships between students, but also between the whole society. Consequently, it's clear that it influences the design of the interior spaces. In our opinion, the conversion of the service spaces, even more wide and bright and flexible, is emblematic. As we have seen, the school classroom is marked by this course of interdisciplinarity as well. A space that at the beginning was narrow or oversized, over the decades has become custom-made for the young users.

For the project of the new school at Crespano del Grappa, we tried to consider all of these facets, adapting the good practice of the projects analyzed to the needs of the present days, to the requests of the competition and to the new sustainable materials; these also influenced the design. The project site, which allowed to choose freely the orientation of the building, with critical issues mostly of urban nature, had made it possible to elaborate the main concepts of the design of the school buildings.

The choice of using wood as building material follow the direction taken in the last years in some sustainable projects located in the North of Italy, in particular in Trentino-Alto Adige, where the constructive typologies are similar to the Austrian and German ones. In addition to the benefits derived from the use of the wood - not treated in this thesis -, it's important to remind that precast and dry-assemblable components allow to simplify the transport and construction phases, with a significant reduction of the duration of the construction. These aspects, considering the state of the school buildings in Italy, where we find schools in critical conditions, and considering the necessity to build new public buildings quickly in the regions recently damaged by the earthquakes, are more than ever topical.

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