

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

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**Ecological sustainability didactics. Planning conceptions for a nursery school realization oriented towards the ecological sustainability for goals**

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The topic that is treated in this dissertation for doctor's degree is the realization of a nursery school in Riva presso Chieri, a village around 20 km far away from Turin. The project arises out of a real need: the replacement of the existing school due to a lack of capacity, and the patch that has been taken into account is the one on which the building will come true.

The location where the building will stand is a new growing area, mostly residential, in which in the next future new residential realities will be added in an already settled building textile.

The patch, south borders on a urban crossing road of relevant importance in the urban context, while its other three sides border on already built residential patches. We moved on to the ultimate architectural definition of the building and to the treatment of the energetic features.

The issue of the ecological sustainability is not only been ment to the surface efficiency and to the use of energetic generation technologies, but we tried to reach the goal of a pedagogical achievement of these features in order to make the children sensitive to them and to get the kids in touch with topics such as energy saving, the intelligent use of solar radiation, whether in a passive way (integration to the winter heating) or in an active way (generation of electricity thanks to the photovoltaic system), and the use of natural materials.



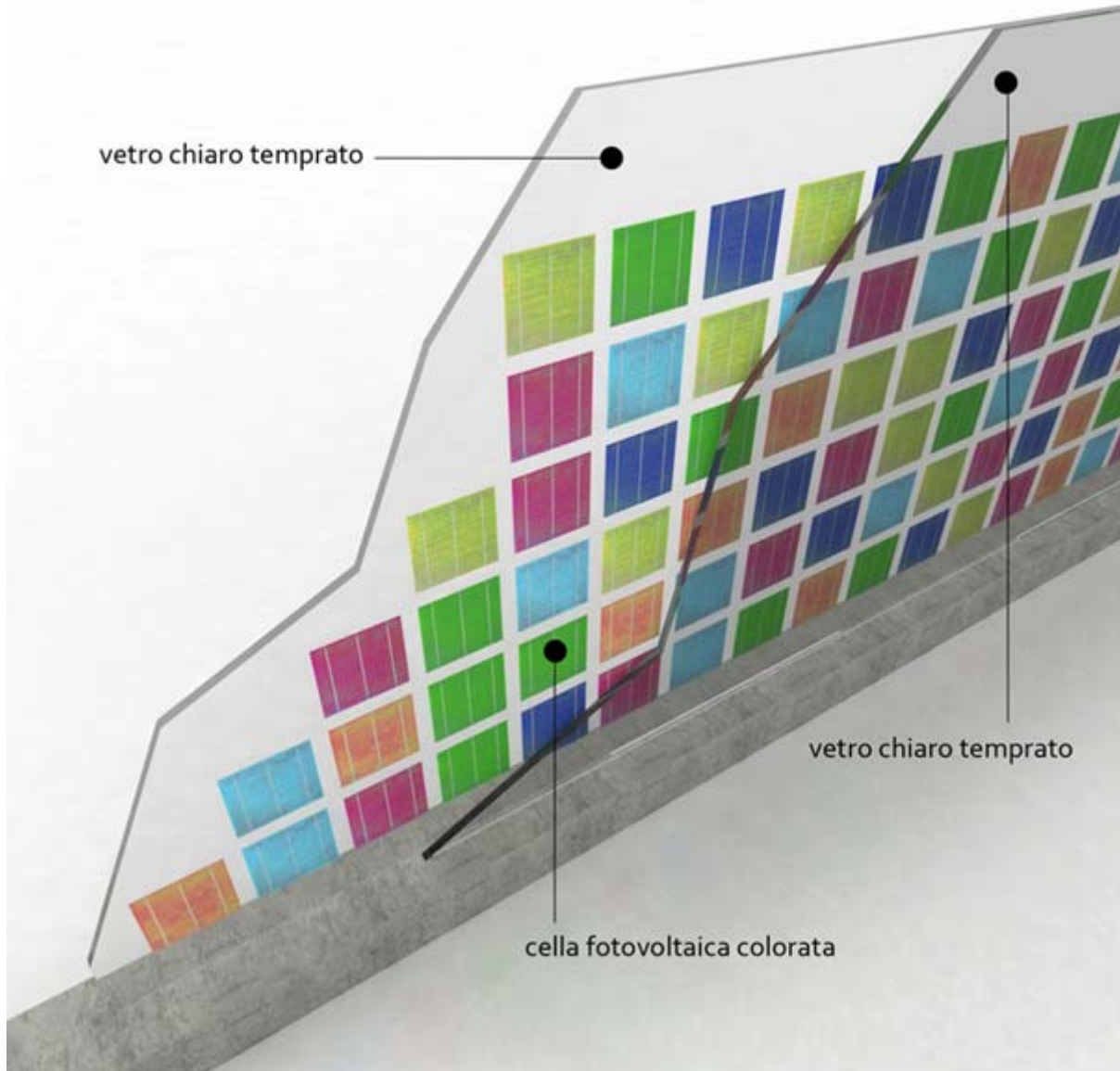
Picture a bird's eye

Also the building volumetry is been appropriately chosen for the transmission of the idea of a natural organism, not planning a structure which assails the ground but one that integrates with it, becomes part of the ground; from these precepts was born the idea of organizing the didactic rooms like they were inside natural hills, you can walk and play over.



Image Front street

Other peculiar topic is the use of the photovoltaic technology. The choice went to integrate it to the fencing wall, producing a glass sheet with coloured photovoltaic cells put between, so as it was an outspoken element of attraction also for the children, joining at last the need of creating a semi-transparent filter between the inside of spaces dedicated to the school and the world outside.



Photovoltaic Wall

Particular attention has been given to the definition of the natural lighting, whether by the physic point of view, checking the respect of minimum requirement, or by the formal perspective, creating different lights, both as direction and strength. Further the building has been defined with the stratigraphic analysis, estimating the building energy requirements, reaching the excellent result of a needs equal to around the half of the regulatory demands, both in winter and in summer.

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