

POLITECNICO DI TORINO
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Honors theses

Application of sustainable technologies in the design of a school: the new school of Cazzago San Martino

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The starting point was the announcement of competition that had as its object the project of a new kindergarten in the town of San Martino Cazzago. The notice was subsequently amended in some aspects of its response to our desire to combine the technological, energy and composition in a single project were provided the following spaces: three sections of kindergarten, two sections nursery, refectory, dormitories, kitchen, playgrounds, offices, nursery and laundry.

It was also chosen to achieve energy performance that make a passive school (maximum power consumption of 15 kWh/m²a for heating), a subject of particular importance because, in the Italian context, there are few buildings with these characteristics compared to the European scene. The will of binding energy efficient building using environmentally friendly passive to natural materials gives rise to the name of the project: A come Ape. The bee, a symbol of sociability and activity, is both an insect, in this case, the acronym for Asilo Passivo Ecocompatibile.

The design concept was created by some considerations about the game and, in particular, the construction game. Indeed, they allow the aggregation of shapes and colors to create new designs. The kindergarten classrooms are facing north to avoid the effect of direct light and excessive radiation, but by using indirect lighting, the classrooms of nursery are facing east because younger children are more sensitive to light, but with adjustable external screens. In the south there are the canteen, kitchen and offices, shielded by brise soleil, were placed in the western lodge, infirmary, storage and technical room. Outside, the building is fairly compact covered with horizontal slats of wood and PVC ; has primary and secondary pedestrian entrance for the employees of service and each volume is grafted in the central higher than others.

The school is designed as part of a larger educational project: a place full of opportunities for learning and growth, a laboratory complex and spaces, colors, materials, lighting, visual perspective and adaptable to educational research. Those who come into contact with asylum for the first time, not knowing what the words “passive” and “environmentally friendly”; will have the opportunity to explore and understand the purpose of the building, will set up an information space. Also will install digital displays within the school, which shows, in schematic way and easy to read even for children, how much energy will be produced, how much water will be recovered during the year, and how to use it. A series of portals wood and lead to the entrance to the central body whose roof is perforated by six circular skylights for lighting and air. Each classroom is characterized by dressing area which leads to the toilet and dormitory, the classroom provides an area devoted to activities and ordered one for free. The opposite wall at the entrance is fully glazed and provided a space where children look soft from the outside, also covers are provided with circular skylights and lighting. Opposite the entrance are the offices of the classrooms, mess hall and kitchen accessible from both inside and outside through a filter zone, located north store, laundry, infirmary and dry lining. Outdoor area used as a green was created a sensory garden planning divided into five areas: smell, touch, sight, hearing and taste. This type of garden is already present in most school facilities in Northern Europe, where it is also practiced Garden therapy.





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