

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

NCCB - New Bra's Cultural Center: Expansion and renovation of the Cavalli's barrack

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The work done in this thesis is a real need submitted by the Bra's City Administration (CN).

The theme developed is the redevelopment of the Cultural Centre and in particular the expansion of the town library.

Currently, the cultural center consists of two buildings : one with the Library, the Museum of Toys and a conference room, while the second is the Conference Centre. Originally this two buildings were used for military purposes, were in fact the barracks Cavalli, in the context of the Military District of Bra.

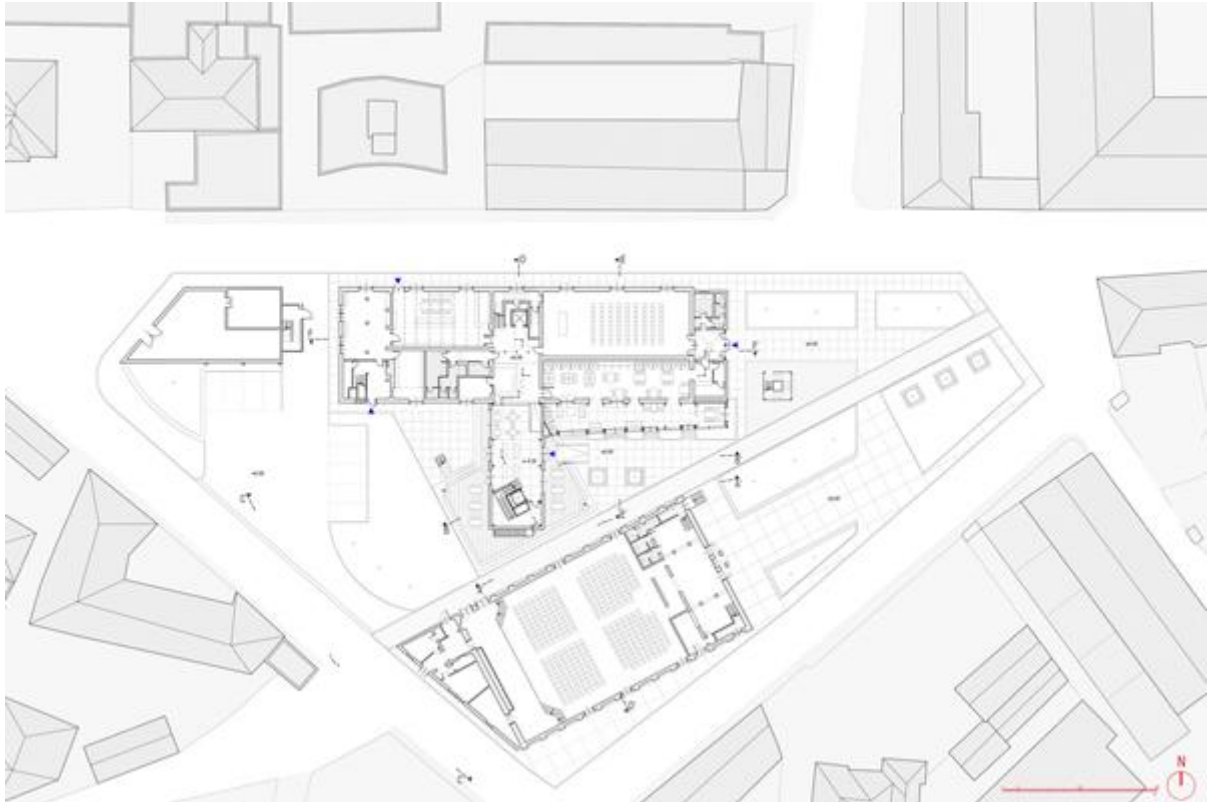
After a first half in which it was carried out a historical analysis and structure of the city, we proceeded to the organization of work according to three distinct scenarios.

The first scenario is the energy rating of the two existing buildings and creates the basis for the considerations of the next phase.

In the second scenario, in fact, after analyzing the results of the existing energy, I have hypothesize improvements on facilities housing more dispersants and a renovation of the heating system with an attached installation of solar thermal collectors in accordance with local regulations.

For each intervention was assumed a cost estimate, (taking into account the current incentives, DM 12/12/2012) energy savings quantified and calculated the payback time. If this appeared under ten years, the intervention was taken into account.

This scenario ends with a significant improvement in energy-efficient, compared to an expense of € 180,000 net of incentives, can be estimated at around 15-20 years payback time.



Ground floor plan

The third scenario is the central part of the work, the project for the expansion of the library, where the composition and function of the new building are flanked by energy considerations, which lead to try to comply with the requirements for nearly zero energy buildings (Call Piedmont Region and DL 63/2013).

The project is set up as an intervention of limited size with a strong relationship with existing buildings and the environment.

The initial concept which will merge all of the following design phase is that libraries should undergo a profound structural change, as happened to museums since the early seventies. Attractors become places of social life, could be understood as a flexible multi-purpose space that you can make even more than the normal hours of a library.



Section and elevation

The project is structured in three main parts: the expansion of co-working, joint and expansion of the library.

The expansion of co-working is set up as an independent intervention that affects part of the ground floor of the library building, now barely *rifunzionalizzando* space using the shell going to enter coworking office space craft.

The joint is the element that unites the existing building and the new volume of library, lifting it off the ground. It's situated in the middle of the library building, at the vertical distribution of the elements and becomes the entry point and liaison between the parties.

The volume of the library appears rotated and aligned with the Conference Centre, in order to keep united compositionally the two buildings. Within the spatial organization of the library is spread over two floors, in open spaces where the perimeter of great importance as they are placed at the carrels integrated reading frames. The facade is treated with a different composition compared to the regularity of the other elements, as well as for the treatment of surfaces.



Render

In the face of incentives for the new volume was estimated at € 900,000, the total cost of all operations, providing a significant improvement to the existing energy consumption and a zero for the new.

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