

RETROFIT OF THE ARCHITECTURAL HERITAGE OF THE '900:

Scenarios for the upgrading of the Mensa of I. Gardella

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The thesis work proposes an energy retrofit and enhancement project finalized to the redevelopment of the Mensa Olivetti, a listed building built in 1961 by Ignazio Gardella an architect and engineer acknowledged as a representative figure of the Italian “Modern Movement”.

The Mensa Olivetti is located in Ivrea (province of Turin) within an area called “Core Zone” that includes more than 100 buildings of particular merit commissioned by Adriano Olivetti and currently candidate to the UNESCO World Heritage tentative list.

The building was conceived as a place of break and lunch break; nowadays it risks to be progressively abandoned since more than 50% is vacant and needs restoration and renovation.

In the thesis work a first part concerns some preliminary investigations on the historical and territorial context and related demographic statistical analysis.

In a second part the redevelopment project is described, pointing out its links with the previous analysis. In particular, a cafeteria, a snack bar, a catering area and a food shop are designed on the basis of Eataly, Fior-Food and MixTO models, the office already present inside the structure have been reorganized to the first floor.

A third part is then dedicated to the economic and energy efficiency analysis performed in order to evaluate the feasibility of the proposed redevelopment project, with respect to different scenarios. A “base scenario” was initially defined considering only minimum interventions necessary to guarantee the accessibility to the building. Subsequently eight different energy renovation scenarios were outlined: in addition to those considered in the “base scenario”, other specific interventions and related technological solutions were proposed at the building shell level. For each scenario the overall energy requirements were defined in order to calculate the resulting energy classes, as well as the primary energy savings.

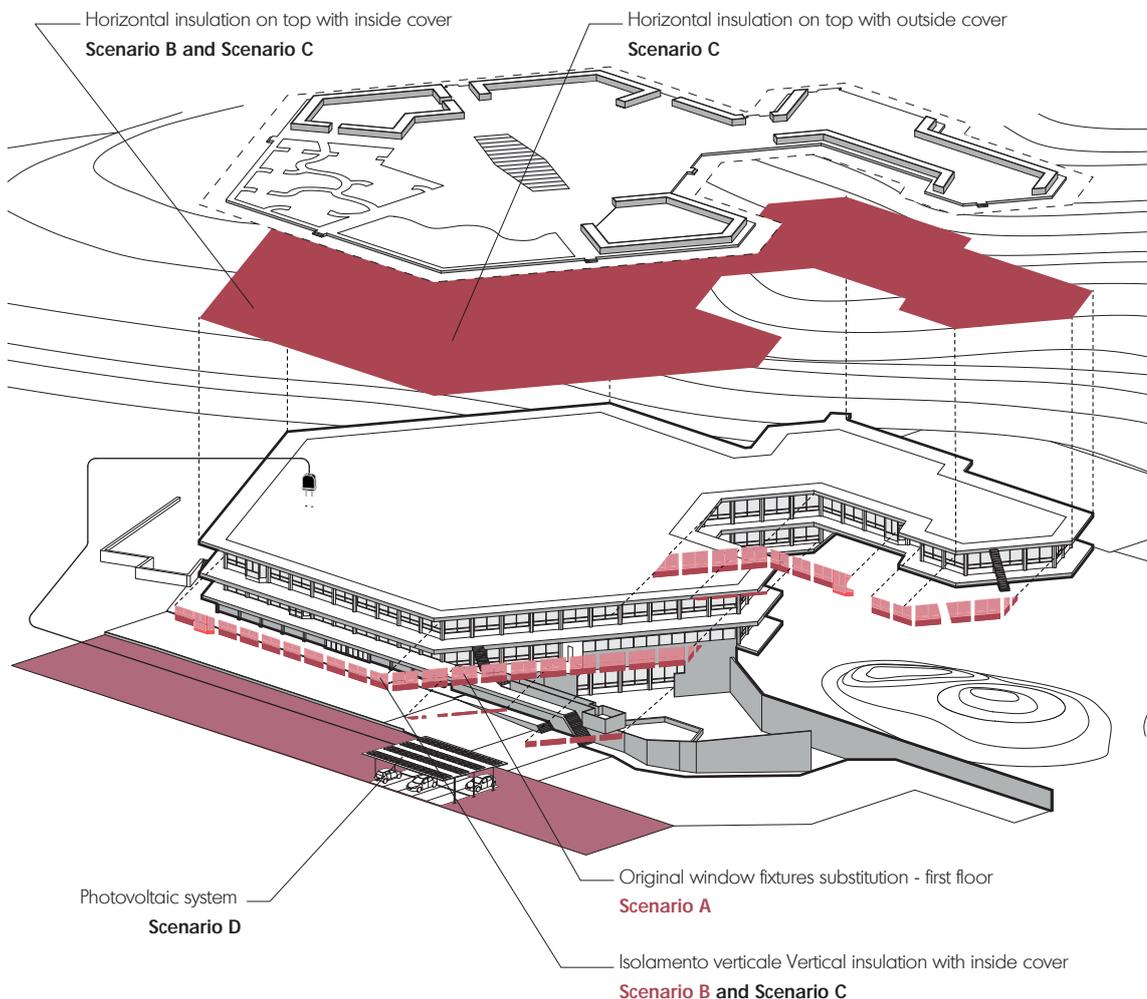
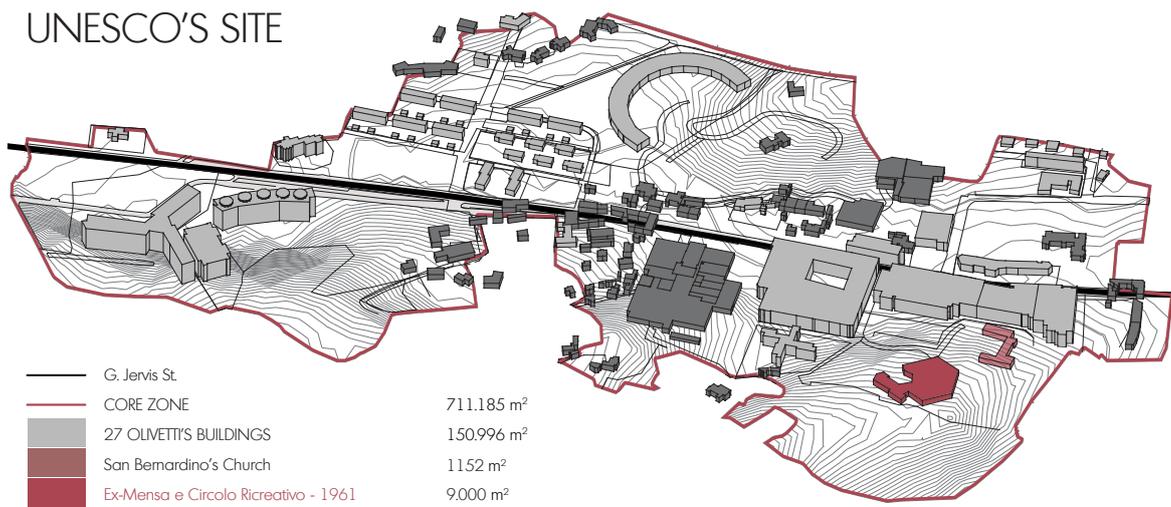
The related economic feasibility was calculated by applying the Life Cycle Cost Analysis and four different economic indicators were analyzed: the Pay Back Period, the Net Saving, the Net

Present Value and the Saving to Investment Ratio.

In conclusion, on the basis of the energy efficiency analysis, the best scenario was identified by applying the Life Cycle Cost Analysis and through the application of a Discounted Cash Flow analysis also the economic-financial feasibility was verified assuming both the building owner and the potential tenants points of view.

In conclusion, this approach represents an innovative tool to support the identification and the evaluation of restoration and energy renovation projects, since it can be reapplied in order to find feasible redevelopment solutions also for other building typologies of the architectural heritage of the '900.

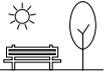
UNESCO'S SITE



PROJECT

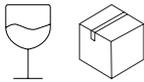
Redevelopment project

- Rooftop** → The new coverage was organized by thematic areas, we find a playground, a bar and various green space with tables and benches. There is direct access to the park behind it.

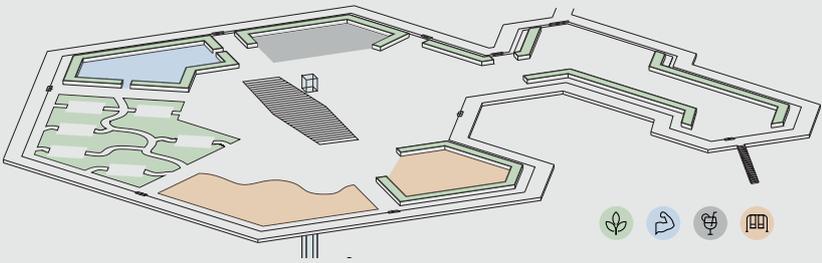
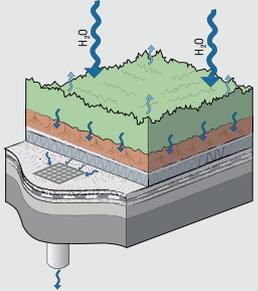

- First Floor** → The office spaces, already present inside the structure, have been reorganized and concentrated on the first floor. New co-working spaces have also been set up.


- Ground Floor** → In the first floor we find great the new function. At this level there are three different refreshment areas distributed between the shelves. Here it will be possible to consume and buy products directly.


- Basement** → In the basement there is a wine cellar where you can buy the product to take away or consume it.

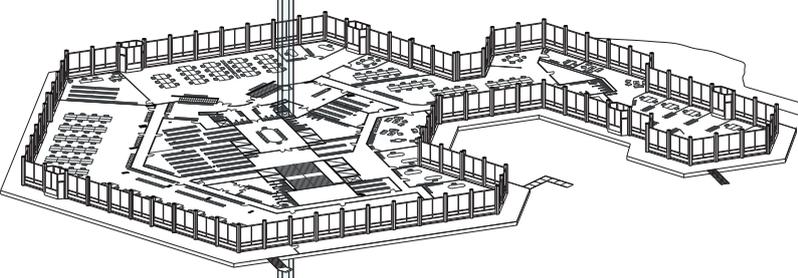
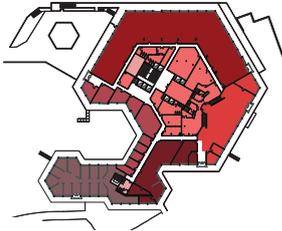


ROOFTOP

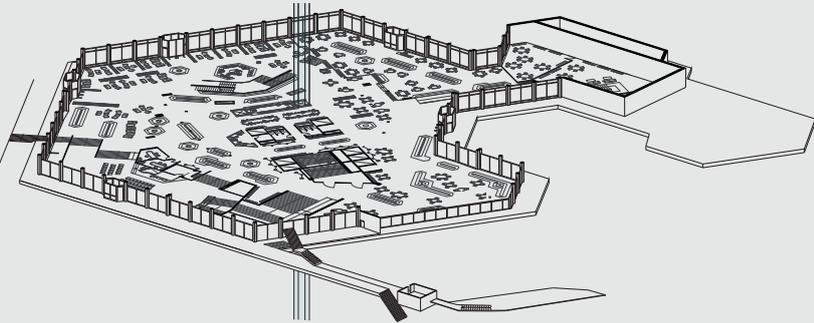
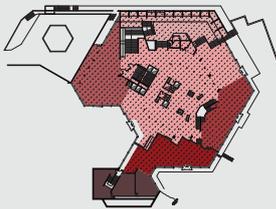
- Grass
- Substrate mixture
- Filtering cloth
- Accumulation/drainage
- Anti-root/waterproofing
- Geotextile regularization
- Slope screed
- Existing floor

FIRST FLOOR

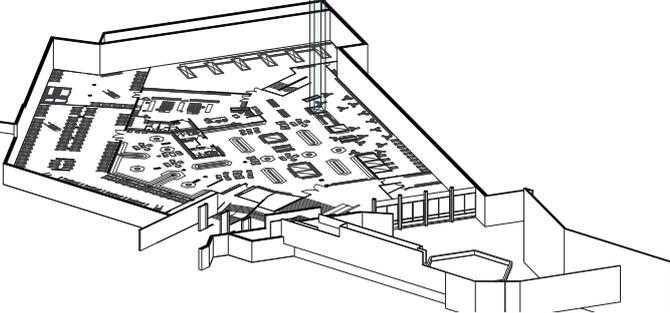
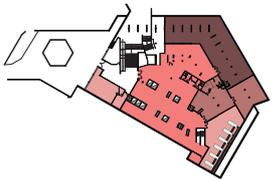
- Olivetti Multi Service
- Co-Working
- Tesi S.p.a.
- A.C.C. Call Center
- Office
- Technical room

GROUND FLOOR

- Spille d'Oro
- vrEAT
- Restaurant
- Coffee Bar
- Finger Fast Food
- Sale Area
- Event Area

BASEMENT

- Kitchen, warehouse
- Warehouse retail
- Technical room ATU
- Technical room
- Sale Area