

- Category: Sustainable requalification of recent building
- Case Study: Piazzale Moroni quarter in Savona

● ● ● **ITALY**
Province of Savona



Project cofinanced by



European Regional
Development Fund



Lead Partner



Provincia di
savona



Sustainable
Construction
in Rural and Fragile Areas
for Energy efficiency

● Category Sustainable requalification of recent building
● Case Study Piazzale Moroni quarter in Savona



Promoter: City of Savona and ARTE Savona (Agency for Social Housing)

Coordination: Technical Departments of Savona Town Hall and ARTE; Dedalo ingegneria Srl – Savona

Preliminary project: architects A. Giachetta, L. S. Bronzin, A. Magliocco (Genova)

Final and detailed project: architects A. Giachetta, L. S. Bronzin, A. Magliocco (Genova) + Dedalo ingegneria Srl (engineers G. Olcese, S. Amedeo, S. Lavagna) e MP/Settanta associati (Savona) + GeSI Srl (Brescia) + Demeglio

Construction management and Security: arch. F. Sottimano + eng. G. Olcese (Savona)

Builders: Injectosong Italia, Riabitat Liguria (Genova)

Consultants, collaborators: M. Brancucci, D. Pollero, R. Tranquilli, S. Aresca, S. Cioncoloni, P. Dettoni, E. Gramolazzo, G. Lavallo.

Date: 2004-2011

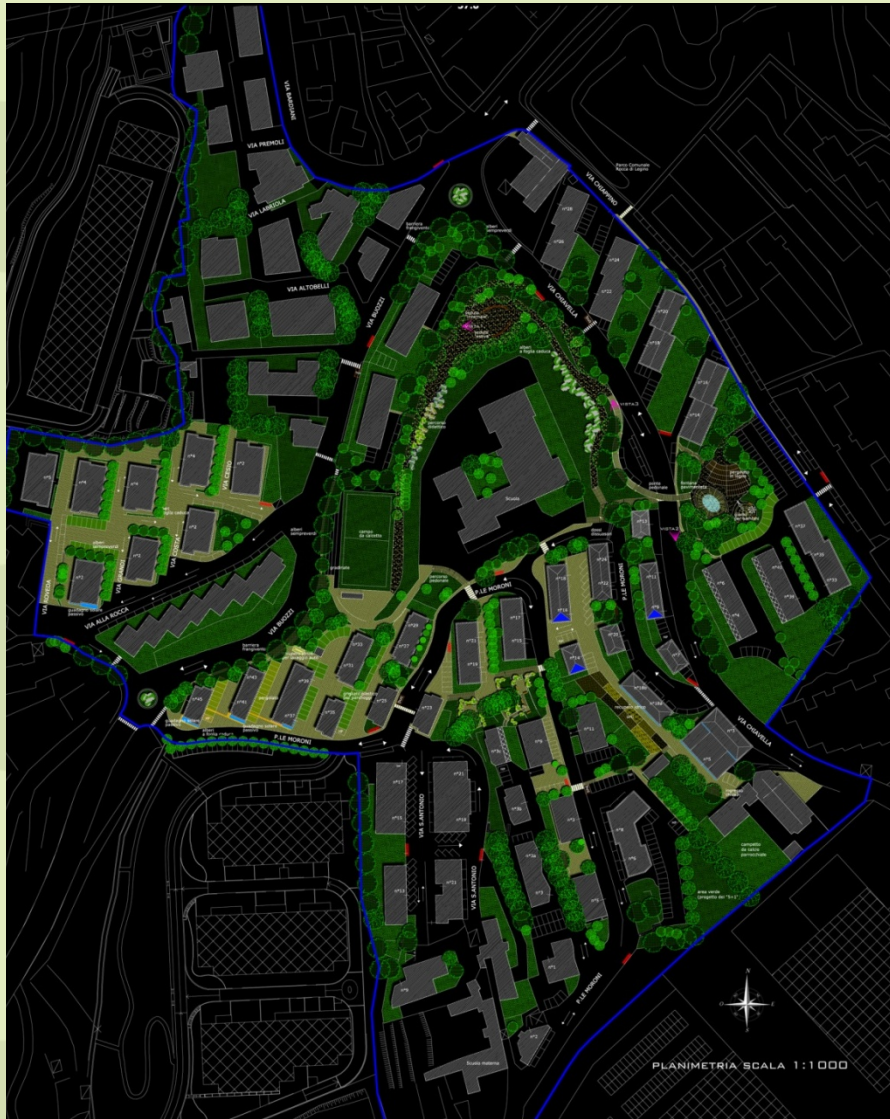


● ● ● Context

According to the ministerial competition “*Contratti di quartiere II*”, the City of Savona, together with ARTE Savona, has obtained funds (about 5 million euros) with which it’s implementing a “participated” project for the requalification of residential areas of the settlement named “Piazzale Moroni”.

This district is constituted by a great number of multi-storey buildings, made in different moments from the second after-war, and it is characterized by different problems, very common to other similar residential areas in the urban suburbs: lack of urban tissue organization, with buildings directly surrounded by the vehicular paths without service areas, without a functional hierarchy, without linking elements; indifference of buildings localization in relation to climatic conditions with reduced solar radiation problems and expansion of very fast air flows due to wind redirection made by natural elements and building blocks position; low technological quality due to low building costs, with thermal insulation problems and, as a consequence, high thermal dispersion in winter, high thermal charge in summer, condensation and mould formation, etc.

Category Sustainable requalification of recent building
Case Study Piazzale Moroni quarter in Savona



Also from the social point of view, there are many problems: there is a high percentage of elderly people, often living alone and with self-sufficiency problems; there are foreign immigrant families with economical and social integration problems; there is a high percentage of unemployed. This area, nevertheless, is characterized by some attracting points: it's near by the railway station; it has a good web of road connections; there are many undifferentiated spaces, easy to be transformed in green spaces; furthermore, behind it, there is an environmentally interesting wooded area.

Description of case study

With the project, we wanted to renew the building characters and to improve the functionality and the suitability of the urban and building context, by strongly integrated actions both on open spaces and building envelopes.

These actions were: to improve the thermal behaviour of the buildings and to reduce the energy consumption for heating, installing passive solar systems and external thermal insulation systems, even paying attention to summer overheating; to remove the concrete-asbestos coatings still existing on the north facades of buildings; to reorganize the open areas and the paths, both pedestrian and vehicular, aiming to make safer open spaces – especially those surrounding the school building on the quarter north border – and to reduce the car flow and the bus transit in the narrowest streets nearest to buildings; to improve the green public areas; to reduce air pollution local effects, the acoustic pollution effects and the effects of too fast air flows in the open spaces, by increasing vegetation; to improve the waste collect by a better position of collect points.

Category Sustainable requalification of recent building
Case Study Piazzale Moroni quarter in Savona



One of the buildings, before and after the requalification project. On the restored façade: Trombe-Michel walls (on the left) and solar verandas.



The project includes the requalification of 15 buildings, property of ARTE for the main part, being sure to give them up for contract without problems through this public financing. However, there are provided funds for the redevelopment of private buildings in the same quarter, as long as the same design criteria are followed.

By this funds availability, the private owners will be incited to use low energy technologies and safe materials to renew their flats.

All the buildings were retained eliminating concrete-asbestos coatings, insulating the building envelope with external thermal cork insulation systems, restoring facades and roofs.

Three buildings, selected for particularly favorable sunshine conditions, were also restored by: additional thermal insulation of recycled cellulose fibers in cavity walls; passive solar systems, Trombe-Michel walls and solar verandas.

On the roof of one of the three buildings, was also carried out a photovoltaic generator of about 20 kWp.

The choice of solutions related to passive solar systems has been guided by the context conditions (climatic data, solar radiation conditions) and by the need to make realistic hypothesis from the maintenance point of view.

The glass facades cleaning - main components of the solar systems - has to be possible and easy to do by the inhabitants themselves, from their windows and their balconies.

To take account of possible overheating problems in summer, every solar system is equipped with shadow devices like metal brise-soleil or external curtains.

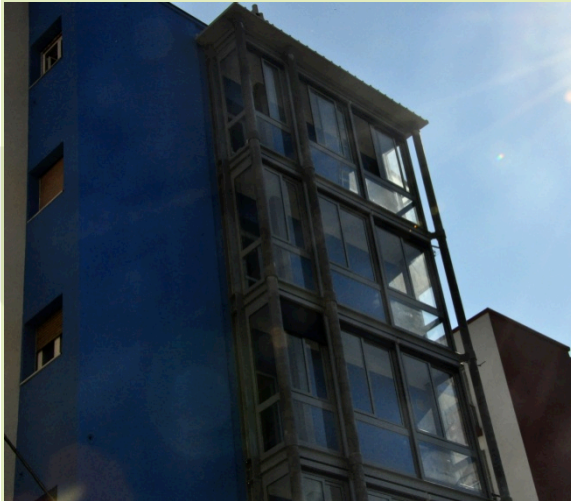
In the Trombe-Michel walls there are also fans activated by thermostats.

● Category Sustainable requalification of recent building
● Case Study Piazzale Moroni quarter in Savona

SCORE Sustainable
Construction
in Rural and Fragile Areas
for Energy efficiency



● Category Sustainable requalification of recent building
● Case Study Piazzale Moroni quarter in Savona



Façades refurbished with passive solar systems. Below, photovoltaic generator installed on a roof (students visiting).



Evaluation of case study

The design approach was founded on the conviction that the residential areas renewal has to be faced by an integrated way, linking the open spaces requalification to the building retrofit solutions. Certainly, the development of solutions following the sustainability principles in architecture - use of low energy content materials; solutions to reduce the energy consumption during the functioning (solar passive technologies etc.); natural climatic control in the open spaces; etc. – is useful to this link. Moreover, inhabitants are a fundamental component of the context (physical and cultural) and their involvement is very important to bring the work to a good end, because it doesn't finish but continues in the everyday activities of living in the public and in the private spaces. A negative aspect was the slow disbursement of funds that has caused delays in project implementation.



Potential for transferability

The urban and social characteristics of the intervention of Piazzale Moroni are common to many suburbs built after the Second World War in European cities; the proposed approach to the redevelopment of Piazzale Moroni quarter also took into account the climatic conditions common to many MED countries.

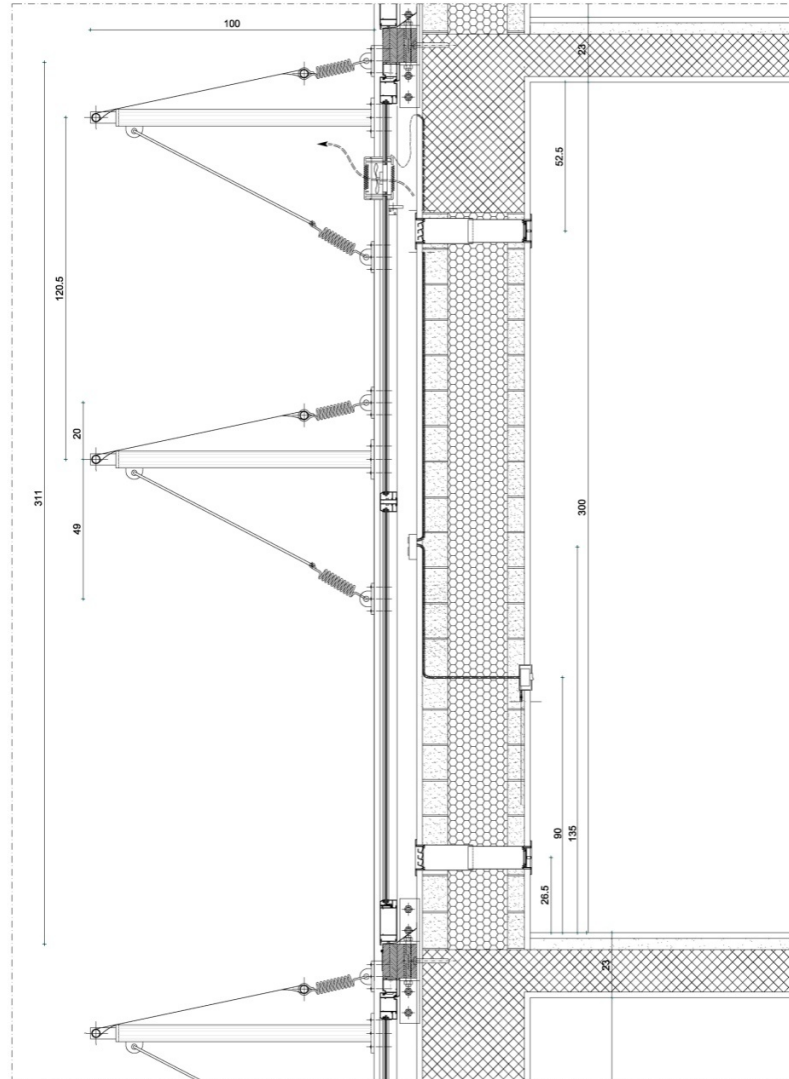
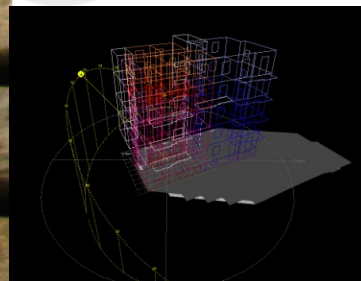
References and Bibliography

Giachetta A., Magliocco A. (2011). "Riqualificazione energetica di edifici di edilizia residenziale pubblica sovvenzionata. Esempi di intervento a Savona", *IlProgettoSostenibile* n.28 (pp.40-45), June 2011, Edicom.
Magliocco A. (2005). "A Project of Sustainable Urban Renaissance: the Piazzale Moroni Neighborhood in Savona", *A&C International* n.4 (pp. 103-11), september 2005, Alinea .
www.comune.savona.it
Il Secolo XIX, Savona - many articles including: "Amianto via dai palazzi" by Cancelli G. , 7 october 2008; "Piazzale Moroni sarà la nuova periferia salotta" by Freccero D. , 1 september 2007.

Category Sustainable requalification of recent building
Case Study Piazzale Moroni quarter in Savona



Studies on scale model, energy analysis with software, construction details and realization of a Trombe-Michel wall.



Project cofinanced by



European Regional Development Fund



Lead Partner

- Province of Savona (ITALY)



Project Partner

- Region of South Aegean (GREECE)
 - Read S.A. (GREECE)
- Local Energy Agency Pomurje (SLOVENE)
- Agência Regional de Energia do Centro e Baixo - Alentejo (PORTUGAL)
- Official Chamber of Commerce, Industry and Shipping of Seville (SPAIN)
- Rhône Chamber of Crafts (FRANCE)
- Development Company of Kefalonia & Ithaki S.A. - Kefalonia (GREECE)
- Chamber of Commerce and Industry Drôme (FRANCE)
- Cyprus Chamber Of Commerce and Industry (CYPRUS)
- Chamber of Commerce & Industry Marseille Provence (FRANCE)

