

ENPIRE Local Project Report Casale Monferrato

Location of project: Casale Monferrato, Italy

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Proposed outline for the Report Summary:

1. Project context

a. Existing situation

The whole area was covered with cement factories and small buildings for offices, all belonging to the Bargerio cementery company, then property of Buzzi Unicem cementery company.

The intervention is part of a major project to upgrade the neighborhood Ronzone, a district of Casale, which involves the construction of a school for children and a new supermarket.

In the neighbourhood there was an asbestos factory, now completely dismantled and the area sanified.

The cement industry is no more operating and is going to be destroyed except for office buildings, that are going to be re-used as museums and not for houses.

The 18th of november 2008 the big smokestack was broken down. The building site was prepared last year and the first actions consisted in the demolition of the factory.

b. Stakeholders (parties involved, interests and ambitions of parties)

The Municipality of Casale Monferrato for economic revitalisation of the area

Consulta of Building Developers of the Alessandria Province as coordinator and supervisor of the building contractors in using insulation technologies, eco-compatible materials;

Buzzi-Unicem Company as former owner;

Regione Piedmont, Environment and Energy dept., for experimenting new building techniques;

Cooperativa Unicapi Building Contractors

GEOS Building Contractors

Capra Building Contractors

ATC of Alessandria (Housing Association)

- c. Legislation, standards and policies (which local or nation regulation is important for energy ambition)*

About energy preservation and insulation national laws are:

- Decreto legislativo 19 agosto 2005, n. 192, “Attuazione della direttiva 2002/91/CE sul rendimento energetico in edilizia” integrato con il Decreto legislativo 29 dicembre 2006, n. 311, “Disposizioni correttive ed integrative al decreto legislativo 19 agosto 2005, n. 192, recante attuazione della direttiva 2002/91/CE, relativa al rendimento energetico in Edilizia”;

The regional laws are:

- Legge regionale 7 ottobre 2002, n. 23. “Disposizioni in campo energetico. Procedure di formazione del piano regionale energetico-ambientale. Abrogazione delle leggi regionali 23 marzo 1984, n. 19, 17 luglio 1984, n. 31 e 28 dicembre 1989, n. 79”;
- Legge Regione Piemonte n. 13 del 28/05/2007 “Disposizioni in materia di rendimento energetico nell’edilizia”.

Actually there aren’t regional or local regulations for applying the above mentioned laws.

About the whole project the urban and building standards are:

- Testo Unico dell’Edilizia DPR 380/2001 (Building Act);
- L. 431/1998 and L. 179/1982 about popular building contracts;
- L.R. 56/1977 for urban planning standards;
- “Piano Paesaggistico della collina del Po-Coniolo” (Landscape plan of the hill of Po-Coniolo), prepared by the Province of Alessandria, Assessorato Pianificazione Territoriale ai sensi della L.R. n° 56/77 e n° 20/89 and “Piano Territoriale Provinciale” (Provincial Territorial Plan), adottato con D.G.P. n° 255 del 29/04/2004, for the architectural choices related to external aspects of the building;
- D.M. 16/01/1996 “Norme Tecniche per le Costruzioni in zone Sismiche” (Technical standards for construction in earthquake zones) for sizing of structures and their features.

- d. Urban development plan*

The main planning was made by the urban planning issue stated in 1989.

The municipal building policies act establishes new rules for bio-sustainable technologies and energy saving.

In 2001 the Accordo Quadro, for the revitalisation of the area from industrial to residential use, was signed between the Municipality and the National Government (D.M. LLPP n. 21 del 08/02/2001)

2. Ambitions for energy/CO₂

a. Which stakeholders and which arguments played a role in formulating the ambitions of the project;

Region Piedmont Environment Dept. and the Municipality were the main actors in planning an entirely new look for a dangerous and polluted area.

b. Did arguments of indoor climate and/or comfort of inhabitants play a role;

Climate and comfort of inhabitants played a main role in planning new kind of buildings while following energy savings and pollution preventing criteria;

c. What was the role of legal regulations;

Legal regulation established parameters and criteria to follow in building planning

d. What was the role of the local authorities;

The municipality played an important role in searching for the best contractors, through the help of the Consulta of Building Developers of the Alessandria Province (Project Developers)

e. Was there a role for inhabitants;

The inhabitants were involved in various meetings from the beginning of the project, at first by asking them how they would see their area, and then by showing them the first projects with a special look on environmental protection.

f. How was the final target determined and agreed on;

A group of individuals like city officers, professional employees of the local authority, utility and community representatives, participated to a series of Targeted Meetings, thus focusing on the following themes:

- environmental protection
- waste disposal
- water reuse
- greening
- economic revitalisation

The planning was mainly done by local technicians working inside the municipality, with the help of the Consulta of Building Developers of the Alessandria Province (Project Developers).

g. Were specific tools and methods used to determine the target level;

To determine the target level were used two calculation models:

- the “TEP Model”, for modelling the residential energy consumption of existing building
- the “Energy&Building Model”, developed by SOFTECH for modelling the energy consumption and saving, including passive contributions, of residential buildings, following the italian codes.

h. What kind of agreement has been prepared about the ambitions (legal contract, covenant, ...), between which parties;

The main agreement was the Contratto di Quartiere signed between the Municipality of Casale, together with the Casale Consortium for waste disposal, and the Consulta of Building Developers of the Alessandria Province; proceeding from the Contract it was necessary to sign Project Covenants with each stakeholder.

i. Does the agreement include a guarantee on actual realisation of targets, how is this checked.

It was necessary to sign covenants with the building enterprises to make them respect the eco-compatibility rules and standards of the entire project.

3. Analysis of energy options

*Describe **shortly** the method and results of the energy study. Identify most promising options, with corresponding reduction potentials and bottlenecks.*

The ecologic village is an important aspect of the whole area planning as it aims at a high environmental level in building criteria; the main aspects of building design are:

- thermic insulation by using high-thickness cellulosic fibers panels, free from harmful substances, window mounts with external crystal pyrolytic, outer shell of the building filled with panels of cellulosic fibers having an average thickness of 14.00 cm;
- passive systems made by solar greenhouses on the southern fronts of the residential units;

- production of electricity thanks to two photovoltaic plants Vp 800 each, for a total power of 1600 Wp, with system "Grid Connected" with release in the public power network;
- limitation of electromagnetic fields with installation of circuit breakers in bedrooms;
- construction of a plant for recovery of rainwater.

4. Discussion of results of energy study

Describe how the energy study results were discussed and received by the stakeholders, how possible conflicts were resolved and which options were finally selected for implementation.

The Consulta of building constructors in Alessandria Province is an association of building companies that occupies an important role in studying and experimenting for energy saving techniques, so the stakeholders play themselves the role of promoting eco-compatible kinds of small buildings and flat blocks.

4. Implementation and evaluation

Discuss the following issues:

a. To what extent have energy options been implemented in your project;

At the moment the project is at its very beginning and energy options haven't been implemented yet.

b. How are achieved reductions monitored;

For example each flat will be equipped with a heat meter designed to measure the consumption of each flat in the horizontal distribution. The data will be sent by bus to a central unit and a signal converter will distribute consumption according to the reading of the accounts installed on the heat generator.

c. How did the decision making process proceed after the agreement was made;

The decision making process has proceeded due to the presence of standards for regulation in funding, the presence of the authorities, which have had a continuous control; moreover there is a strong political will of going on and improving the environmental scenario of the area.

d. Were the CO2/energy ambitions modified later;

According to the project, the level of energy abatement is equal to the new regulatory Italian levels in 2006. The centralized and gas-powered heating allows significant advantages in terms of:

- Reduction of power
- Efficient operation and maintenance
- Increased security
- Containment of individual consumption.

At the moment no changes were made to the project since the initial stage.

e. How did you use the draft guidelines on Process and on Embedding Agreement (see ENPIRE website, under Publications);

From the draft guidelines we have extrapolated the settings starting from a general embodiment of agreements (Embedding Agreement) and in particular the approach to Local WP6 project, that shows the steps to follow to making the project.

f. What feedback can you give with respect to these guidelines;

The draft guidelines on Process and on Embedding Agreement were useful for setting up a new job based on collaboration between various partners and the application of new technologies.

g. What other lessons were learned;

The ability to collaborate can help achieving savings of sources and materials and improving the wellness.

h. Was the planning process your project different from what is customary in your country? In which ways?

The planning process our project was different from the common planning in public administration.

i. Could the approach in your project be used on a wider scale, what changes would be necessary for this?

In order to use it on a large scale the project should be implemented within a common methodology for planning, supported by local regulations, such as local building regulations, providing for reductions in charges in the case of bio technology. In this sense

they are already doing some Administrations. It would also be a change of mentality of mass also supported by the reduction of prices of products and technologies on the market.