

**Category: Urban regeneration and development****Registration nr: 1050**Description

The project aims to build an entire village entirely "green" and sustainable "livable". The project was born with the opportunity to renovate an area of the C1 segment of the City of Montefiore dell'Aso (AP), which was not properly exploited and had the characteristics of a classic edificatorie fund expansion. Intervention aims to enhance and adapt the working sector in terms of redistribution of urban spaces, roads and usability, panoramic views of the typical bell of the "Marche".

Particular attention has been paid in analyzing the parameters bioclimatic (sun, wind and shadow) so as to use nature as a source of support. Harnessing the sun for heating and production of electricity. Take advantage of natural ventilation to cool the space. Exploiting plants for the appropriate summer shading.

In addition, for the realization of the whole village, are used only natural materials and recyclable, so always take into account the entire life cycle of the product (from the production, use, to disposal). The three types of homes, in fact, are made entirely of wood and its derivatives; the structure (with pillars and beams laminated wood), to the cladding (made with a special package that includes only items that contain wood fibers).

In short, the whole village, "ECOvibile" is a candidate to be a place environmentally friendly, but also socially for sustainable.

**CONCEPT, PACKAGE AND MATERIALS**

The living quality of wooden houses depends on the materials used to produce them. It was decided therefore to use only materials of wood and its derivatives, because it is proven quality and there is certainty that their use is not harmful to health. For man spends three quarters of his life in confined spaces and materials used greatly affect our health. For this reason it is advisable to use appropriate materials and respectful of human health. Wood as a natural building material, is alive and produces a particularly beneficial effect on our well-being.

The village is designed with the goal of producing homes that have zero CO2 emissions, zero use of fossil fuels and zero energy costs. In addition, heating, hot water and kitchens, will be powered by photovoltaic panels and solar thermal systems are fully integrated into the structure. Among other facilities, there will be ventilated roof and foundation to take advantage of the convection air to optimize the energy balance.

The particularity of the construction system used is that of the construction of the body factory with supporting frame in wood. The insulation package will then solely intended for infill. In this way the house can be assembled on site, reporting the local laborers to carry out true and his own carpentry wood.

You can also use approaches of "self-construction" to make the project available to everyone.

**Name of the project:** Villaggio ECOvibile**Name of the team/ participant:** Ing. Daniele PORRA' ; Geom. Massimo VALORI**Year of construction:** 2011/2012**Site location:** c.da San Giovanni, 63062 - MONTEFIORE DELL'ASO (AP)



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***ECONOMIC ANALYSIS IN THE LIFE CYCLE***

For this project was also made careful economic analysis can consider the entire life cycle of the building. The analysis was then compared with one made for a building with similar characteristics, but realized with the techniques of traditional building. In the economic analysis of the two building systems are considered only those costs that differ between the two types used, excluding foundations, excavations and charges.

For "ordinary building" (or "Traditional solution", as defined in the works), means a body factory made masonry bearing seismic blocks, thermal insulation and glass thermo-acoustic insulation. The energy class average obtained with a package of this type is close to the "C". Corresponding to about 9 m<sup>3</sup> of oil per m<sup>2</sup> of surface to be heated.

Making a fast comparison with a solution in energy class "A", can be considered consumption of about 1/3. Specifically, in the solution assumed for the village (or "Village solution" to the papers), the demand for energy in terms of fuel consumed, is considered void as heating and cooling are guaranteed by the photovoltaic system.