



## Platform for an nearly zero emission Mediterranean House

### Foreword

#### ENVIRONMENTAL ENERGETIC PRIORITY: LOW CONSUMPTION, HIGH COMFORT

The residential sector consumes 27% of the energy used annually in Europe and it contributes proportionally to the emission of CO<sub>2</sub>. The efforts done in these years with the application of the Directives on the energetic efficiency of the European union have improved the energetic performances on new constructions (above all for the winter phase) and partially of the stock of existing buildings, but a potential of unexpressed amelioration still exists (in MED countries especially for the summer phase), important space of job for the future realization of the directive NZBE, to decline otherwise according to the different categories of use.

The realization of the European Directives has pushed to the introduction in MED countries of north-European constructive models: strong isolation and control of the ventilation (with the purpose of controlling the dispersions to this connected). It is the idea of Passivhouse.

Such strategy nevertheless introduces some problems:

- it risks, for the countries characterized by conditions of middle to high radiation and for which the energetic consumptions are prevailing for the climatization of the buildings, to inhibit the potential of obtainable energetic saving in summer phase from buildings with materials and constructive technologies with ability of accumulation, moving therefore part of the obtainable energetic consumptions potentially on the useful energy to produce the insulator used for the isolation.
- it has the tendency to create meaningful housing comfort problems for some typology of users (elderly population), for several years in strong growth;
- it has the tendency to create health problems inside the environments, forcing to the use of devices whose installation results not suitable for weak typologies of users.

It is necessary in this new phase to start to conjugate the themes of the energetic saving with the themes of living and the environmental sustainability of the buildings not only guaranteeing saving, but also comfort, health and sustainability in relationship to the different typologies of users. The social and demographic evolution of the population living in the Mediterranean basin has determined in fact the rise up of new more sensitive and careful social and cultural appeals to the environmental themes. The distinctive elements that



testify this change of identity foresee new formalities of use of the urban and housing spaces able to answer to criteria of architectural quality and environmental compatibility.

It is important to combine in different ways the concept of Passivhouse and adapt it to:

- our social, cultural and geographical context;
- specific typologies of users;
- the most sustainable concept of a nearly zero emission Mediterranean House.

### MEDITERRANEAN HOUSE: EFFICIENCY, QUALITY, HEALTH AND COMFORT

A house realized:

- to contain the energetic consumptions both in wintertime and summertime;
- to reduce to the minimum or to eliminate the endowments of machinery;
- to guarantee suitable comfort to all the typologies of users;
- to guarantee good living conditions and health in the buildings.

## MANIFESTO

### 1. Attention to the climatic factors

The Mediterranean House must hold in consideration the local climatic factors, to build a model of housing system suitable for the winter (heating) climatic conditions, but above for the summer (heat reduction), having the tendency to contain away the requirement of technological devices for heating and ventilation. The Mediterranean House lives on air, sun and water and the climatic factors become authentic allies for its sustainability.

### 2. Attention to the orientation

The orientation of the building is a fundamental factor to guarantee a good functioning of the building, intending not only a good disposition towards the sun, but also the evaluation of the dominant winds, the influence on the microclimate of the external environmental factors: green areas, sun or shadow brought from other buildings or from natural elements.

### 3. Use of natural and local materials

The choice of natural and particularly local materials must be privileged, through a careful study and adaptation of the traditional techniques that have often produced a house building with better



characteristics than the "modern one". The materials that compete to the construction of the residence must be sustainable from the production to the disposal. It is not, therefore, a return to old times, but of a revaluation in a modern key of materials already broadly experimented.

#### 4. Correct mix of active and passive systems, and of renewable energies

The objective of a nearly zero consumption Mediterranean house must be achieved through a mix of solutions, to be evaluated in every single case, among passive bioclimatic solutions (choosing natural and local materials, using thermal inertia and natural ventilation) active solutions through machinery and the most effective use of the renewable energies (not only solar, but also micro-eolic, geothermic etc.).

#### 5. Involvement of the inhabitants and attention to the models of use

The inhabitants' involvement in the choices is also for our regions a key element for the success of the initiatives of containment of the consumptions, but it also needs to conceive some housing systems that are suited for the models of use, to the ways of life and the level of awareness of the inhabitants, avoiding, if necessary, solutions that ask for a too complex direct intervention from the inhabitants (systems of shadowing furniture, systems of ventilation mechanics etc.). Inhabitants must be informed about their consumption in order to develop well-aware models of use.

#### 6. To promote the Culture of sustainability

Creation of a system, continuous and open to the operators, able to spread the culture and to promote the principles / criterions of the Mediterranean house. To involve, approach and reach the different targets of professionals, operators and consumers and to sensitize them to the theme, moments of comparison and debate will be organized for the development of a movement that finds its centre of reference in the Mediterranean area. Particular attention will be set to the formation of children as vehicle of an echo-sensitive culture towards the families.

#### 7. Technology and formation

Create not only a cultural movement but also a platform able to promote technical solutions, methodologies and materials. Considering the new addresses of Europe it will be fundamental to develop procedures and forms to correctly build, to form the workers on a correct use of materials and to form the ability to know how to choose the best technology. The intent is that to facilitate the meeting between question and offer of qualification / retraining of specific professional figures, through systematic formative actions, uniform and continuous. The proposal foresees the definition of formative runs.



### 8. Integration and monitoring of the systems

Use of technological devices and ICT of simple use and maintenance, integrated in a system of easy understanding for the consumer, implementable according to the necessities (safety, communication etc.) to be used for a constant monitoring of consumptions and correct functioning.

### 9. Housing typologies and models of bio-climatic urban development

The organization of the district and the housing typology can positively or negatively affect on the climatic factors and contribute to avoid the creation of tides of air around the buildings, of overheated or too shady zones. An accurate use of both green areas and water, of the materials for covering and flooring can also contribute to the comfort of the inhabitants in winter and summer, inside and outside the residences. Particularly the resource water must be appraised with attention as it regards the rationality in the use and re-use, without forgetting that a newly disciplined urbanism on the permeability of the grounds must be founded also for the improvement of the microclimate and the reduction of the "island of heat" effect in urban areas.

### 10. Appropriate funding

The characteristics of the climate of the south bring to the fore the summer period, which is longer and temperature always warmer, while the winter is shorter than in northern countries. This makes it more difficult to use systems of financing via third parties (Third Part Financing in English) and ESCOs. Should be adapted the financial plans and the financing systems to climate data and should be find viable solutions.

## CONCLUSION

Housing Europe, Federcasa (IT) and Enea (IT) launch this initiative for the creation of a net that sees the involvement of all the subjects who share the principles of this manifesto; an open net that will find its own virtual centre in a web platform of Housing Europe and Enea that intends to represent the point of departure for the construction of a shared proposal for the promotion of the Mediterranean House in the places in which climatic conditions are favourable to the application of these principles.