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REGIONE DEL VENETO

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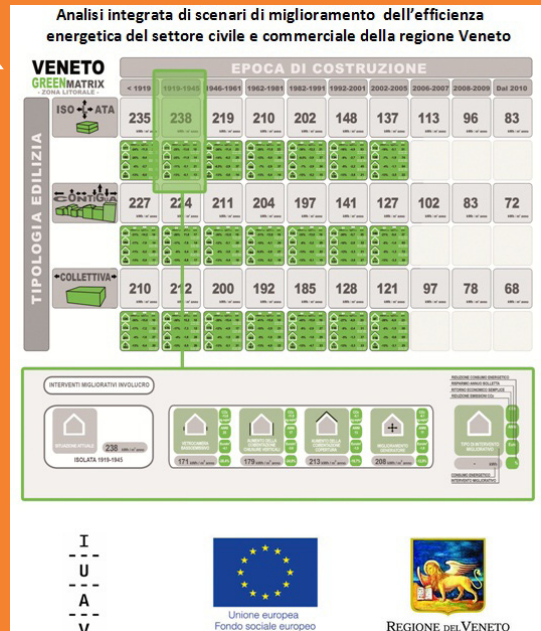arighi@iuav.it

GREEN MATRIX

Methodology for the analysis of the energy efficiency of the housing stock

KEYWORDS:
- ☐ Building culture
- ☐ Construction
- ☐ Closed loops
- ☐ Governance
- ☑ Planning Tools
- ☐ Ecology
- ☑ Energy efficiency
- ☑ Indicators
- ☐ Mobility
- ☐ Technology transfer

TARGET GROUP:
- ☑ Architects
- ☐ Builders
- ☐ Citizens
- ☐ Craftsmen
- ☐ Home Owners
- ☑ Planners
- ☑ Politicians
- ☑ Policy Makers

Analisi integrata di scenari di miglioramento dell'efficienza energetica del settore civile e commerciale della regione Veneto

Results and outcomes (use cases):

The methodology allows to analyze and evaluate the potential for improving energy efficiency of the different building typologies of the housing stock of a given territory.

The result is a matrix that evaluates the energy performance of the existing building assets of a territory on the basis of the construction period, building type and climate zone. For each combination the following information is presented:
- The current value of energy consumption of the building system (envelop and building systems) obtained through the use of a dynamic model of the energy performance calibrated on energy bills of a sample of buildings;

- A comparison of possible scenarios for improvement. The evaluation of the possible interventions are carried out by multi-criteria analysis that takes into account economic, environmental and energy aspects.

According to the specifics emerging from the territory analyzed it can be used to:
- Define territorial specific objectives and strategies in urban policies and planning instruments.
- Prioritization and differentiation of planned interventions on existing building stock.
- Better allocation of resources for incentive policies.

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Description:

The methodology has been developed by the IUAV University of Venice on the occasion of the research grant "Integrated analysis of scenarios for improving energy efficiency of the civil sector and commercial Veneto region" part of the inter-university project for a Climate Plan for the Veneto Region.

The methodology consists of the analysis of the energy performance and improvement scenarios of the existing housing stock through the use of available databases, such as: the census of population and housing carried out by National Institute of Statistics (ISTAT) on the number of buildings, building types and period of construction and the reports from the National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA) – on the incentives of tax deduction of 55 % for energy retrofitting interventions.

Relevance for inter-municipal planning (AlpBC):

The methodology allows to analyze the building stock at various spatial scales, obtaining not only statistical data but also quantitative data. The use of these data is very important for the planning of a territory. It is also important to raise awareness or to under-stand the composition of the territory.

The methodology has been used for the case of the climate plan for the Veneto Region territory and for the Sustainable Energy Action Plan of the Municipality of Castelfranco Veneto.

Relevance for policy goals (Alpine Space, Europe and the region):

With regard to the energy sector, with these data it is possible to estimate the incidence of energy retrofitting interventions at different scales thus setting the policy that best suits the specific territory under examination. This information is useful to design, implement and verify policies for the improvement of the energy efficiency of the housing stock at different territorial scales. The scale of application is in fact variable: national, regional, provincial, municipal and sub-municipal level.

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