NEW MODELS OF RESIDENTIAL REFURBISHMENT FOR EUROPEAN HOUSES

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The whole consortium of REZBUILD, the new European project in which CARTIF works on funded by the Horizon2020 Programme of the European Commission, has celebrated its kickoff meeting in Rome. Under the coordination of Officinae Verdi Group (Italy), the 13 members from five different countries have established the steps to start to work on final objective: the development of an innovative and collaborative refurbishment ecosystem for transforming buildings into Near Zero Energy Buildings (NZEB). The developed tools and technologies will be applied on the **four main residential building typologies in Europe**: single-family house, terraced house, multi-family house and apartment block.

The construction sector is the **highest energy consumer** (about 40%) and **main contributor to GHG emissions** (about 36%) in Europe. At this stage, tackling refurbishment of existing residential buildings (historic buildings included) is a top priority and decarburization is the main goal aligned with the European energy and climate change policies, which turn Energy Efficiency into a sustainable business.

Nowadays, NZEB renovation methodologies are required as one of the key enablers in order to promote business research and innovation through energy-efficient buildings.

In this context, REZBUILD will base its refurbishment ecosystem with the integration of cost-effective technologies, business models and life cycle interaction to diverse residential renovation typologies and interconnecting both, building renovation stages and stakeholders.

This innovation will establish a multi-collaborative framework within a refurbishment methodology managed by an Agile Project Management tool based on cloud service, capable to interconnect in real-time the key steps of a tailored retrofitting plan among all stakeholders involved within the building renovation value chain.

Moreover, decision making tools will be performed in order to validate the best optimized cost-effective refurbishment technology package in 3 different European scenarios (**Spain, Norway and Italy**), each one with a different representative climate and typology of building.

CARTIF will lead the following tasks with the objective of the development of a set of cost-effective, systematic and low-intrusive and integrated retrofitting technologies and processes:

-3D façade printing technology, allowing rehabilitation in a reduced time and with customized shapes and formats.
-New wide range of non-rigid, lightweight, colourful, plug&play BIPV products.
-Three new cost-effective, ergonomic and recyclable insulation solutions based on gypsum plasters and boards.
-Smart HVAC systems based on radiant floor heating and solar heat pumps.
-New energy production monitoring tools to be integrated as BEMS.

REZBUILD consortium brings together **13 partners from 5 different countries**. The consortium is formed by the equilibrated collaboration of international level entities represented by big industries, SMEs, consultancy firms, RTD centres, public bodies, users associations and academic institutions: Officinae Verdi Group (Italy), Vias y Construcciones (Spain), CARTIF (Spain), ESTIA (France), Comunidad de Madrid (Spain), Saint-Gobain Placo Iberica (Spain), ONYX Solar (Spain), SINTEF (Norway), OBOS (Norway), University of Nottingham (United Kingdom), Exploded View (Spain), Rimond (Italy) and Zabala Innovation Consulting (Spain).

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