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Upcycle of municipal waste as high performing components for elderly housing: A new strategy for building in ageing society

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The main goal in upcycling municipal waste as technical components for the building industry is to comply with the pressing requirements coming from NZEB policy adopted in EU framework program Horizon 2020. CITERA research center, in cooperation with Lazio District has developed different components for the building envelope up cycling wood pallet, plastic and glass bottle, tires and aluminum cans, with high thermal and acoustic performance according to Italian latest building energy regulation (D.lgs. 311/2006). This component can be used both for vertical elements and for horizontal floors both for new constructions and for main refurbishment. A first application of this technology is a new model of social housing for elderly coming from the needs expressed in the position paper of Italian government on ageing society regarding the built environment. In fact the planning and design approach will need to incorporate the values and perspectives arising from this new cultural and demographic scenario, adapting solutions to meet the needs of ageing societies. Understanding the evolving needs of older adults, as they progressively arise in life, is the first step towards finding flexible solutions providing assistance while encouraging ageing in place (home/neighbourhood/services). The proposed flexible housing model is the first result of an International cooperation program between Italy and the kingdom of Sweden for the years 2014-2017 on the ageing society's issues.

Biography

Fabrizio Cumo is a Nuclear Engineer, and Professor in Applied Physic Faculty of Architetture – University of Rome “La Sapienza”. He operates in the Institute of the Valorization and Restoration of Cultural Heritage of Italian CNR (ICVBC) –section of Rome. He is the member of the board of the CITERA center and director of the Master “BIM” Building Integrated Modelling. He is the Leader of some international research groups for the responsible use of energy in residential area and the use of renewable sources. He is the author of more than 120 papers regarding the fields of energetic, environmental applied physic (IAQ, heat transfer and lightning) and architecture technologies.

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