

# 40<sup>th</sup> IAHS World Congress on Housing Sustainable Housing Construction

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# 40th IAHS World Congress on Housing Sustainable Housing Construction

Book of Abstracts

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## CONTRIBUTIONS TO THE IMPROVEMENT OF GREEN ROOFS IN MEDITERRANEAN CLIMATE, INCLUDING RAINWATER HARVESTING

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**Abstract** *Green roofs (a type of construction that uses vegetation on the top of buildings) present the opportunity to contribute to the ecological sustainability of the urban environment in many ways, such as favouring the thermal performance of buildings and increasing humidity and contributing to CO<sub>2</sub> sequestration in cities. On the other hand, rainwater harvesting is also important in urban areas, not only as a contribution for the global sustainability of buildings, through the increase of their water efficiency, but also to reduce flood peaks on public stormwater drainage systems. Green roofs and rainwater harvesting systems are technologies already known in the world, but for which there are a wide possibility of development and improvement, especially with regard to their adaptation to regional climates, such as the Mediterranean one. These technologies are particularly important in the Mediterranean basin, at risk of high water stress, and must be combined properly in view of the climate specificity. This paper describes the studies in this area conducted by Portuguese Catholic University/College of Biotechnology, in collaboration with ANQIP, a Portuguese Civil Society Association working on water efficiency in buildings, in terms of substrates, runoff coefficients and water quality collected in a pilot green roof. This study seeks to improve the basis for the design of rainwater harvesting systems in buildings with green roofs and a new expression is proposed for calculating monthly runoff coefficients under Mediterranean climate in extensive green roofs.*