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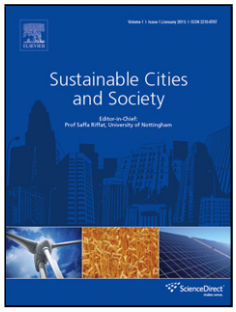

Title: Sustainable building renovation for an ageing population: Decision support system through an integral assessment method of architectural interventions

Authors: Antonio Serrano-Jiménez, Ángela Barrios-Padura, Marta Molina-Huelva

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Sustainable building renovation for an ageing population: Decision support system through an integral assessment method of architectural interventions

Antonio Serrano-Jiménez (Corresponding author)

Department of Building Construction I

University of Seville, Seville, Spain

e•mail: aserrano5@us.es<mailto:aserrano5@us.es>

Ángela Barrios-Padura

Department of Building Construction I

University of Seville, Seville, Spain

e•mail: abarrios@us.es<mailto:abarrios@us.es>

Marta Molina-Huelva

IUACC - Institute of Architecture and Building Science

University of Seville, Seville, Spain

e•mail: martamolina@us.es

Highlights

- New tool for the analysis and decision-making process in residential retrofitting
- This research is an incentive to promote sustainable building renovation
- Comprehensive evaluation to the residential requirements for active ageing
- The methodology is applied in three case studies in Spain and Portugal
- Architectural, social and economic impact of "age-friendly" measures is evaluated

ABSTRACT

One of the global challenges of the 21st century is to guarantee adequate residential conditions for the ageing population, by regenerating obsolete urban environments. In addition to compliance with environmental policies through energy retrofitting, a sustainable urban renovation process involves ensuring optimal conditions in security, habitability, and comfort through residential adaptation to the new requirements.

This research develops a new method for the analysis and decision-making process in residential retrofitting. This is an open and flexible methodology that has been applied in three reference case studies in Spain and Portugal. Starting from a technical and social diagnosis, the set of measures is analysed through multiple sustainable issues, structured into four main blocks: Technical Requirements and People´s demands; Constructive Process; Social benefits; and Economic revaluation.

The results show the overall and detailed assessment of each measure, and a cost-benefit ratio, which informs the promoter as to ascertain the benefits and drawbacks of each measure. There are measures that exceed 80% of the maximum benefit and achieve an integral revaluation of the property value, as well as measures that exceed 50% of the benefit