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Book of Abstracts

Editors:

António Tadeu
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Oktay Ural
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SUSTAINABLE CHARACTERISTICS OF SCHIST AND GRANITE ANCIENT BUILDINGS IN THE PERSPECTIVE OF THE THERMAL BEHAVIOUR

Marta Pereira[1]*, Ana Briga Sá[1,2], Anabela Paiva[1,2], Jitka Mohelníková[3], Sandra Pereira[1,2] and Jorge Pinto[1,2]

1: ECT - School of Science and Technology,
University of Trás-os-Montes e Alto Douro UTAD
Quinta de Prados, 5000-801 Vila Real, Portugal
marta_lipe@hotmail.com, {anas, apaiva, spereira, tiago}@utad.pt. http://www.utad.pt

2: C-MADE–Centre of Materials and Building Technologies
University of Beira Interior
6201-001, Covilhã, Portugal
cmadeubi.wordpress.com

3: Faculty of Civil Engineering
Brno University of Technology
Brno, Czech Republic
mohelnikova.j@fce.vutbr.cz

Keywords: Ancient buildings, Bioclimatic techniques, Thermal behaviour, Sustainable construction

Abstract: *In general, ancient buildings were constructed according to specific climatic characteristics and using preferentially local building materials. Therefore, it is expected to find compatibility between an ancient building and the region in where it is placed. In Portugal, it has been noticed that traditional construction presents specific building details which may be a result of an empirical knowledge. Their study and record seems important to perform in order to avoid losing this relevant technical information. On the other hand, it has also been noticed that the above referred compatibility between building and region has been faded nowadays in Portugal in the new building processes. Thus, this research work intends to give a contribution in this context by focusing in the district of Vila Real, in the Northeast of Portugal, where ancient buildings were made of local materials, such as schist, granite, wood and earth. An attempt of correlating traditional buildings details with their impact on the overall thermal behaviour of a building is one of the main goals to achieve. Some of the building details which characterize these types of traditional buildings were identified in this research work. They are high thermal inertia, high thermal storage capacity, significant thickness of the exterior walls, glazed areas preferentially South orientated, small glazed areas, usage of vegetation as a shading solution.*

THE LOCAL INFLUENCES OF SUSTAINABILITY IN HISTORIC CENTRES FOR BUILDINGS REFURBISHMENT AND FOR LIVING

Rui A. Oliveira[1]*, Jorge P. Lopes[2] and Maria Isabel Abreu[2]

1: Civil Construction and Planning Department
School of Technology and Management
Polytechnic Institute of Bragança
Campus de Santa Apolónia, 5300-253 Bragança
e-mail: roliveira@ipb.pt, web: http://www.estig.ipb.pt

2: Civil Construction and Planning Department
School of Technology and Management
Polytechnic Institute of Bragança
Campus de Santa Apolónia, 5300-253 Bragança
e-mail: {lopes, isabreu}@ipb.pt, web: http://www.estig.ipb.pt

Keywords: Building refurbishment, Management, Location, Sustainability, Parameters.

Abstract *The historic city centres are comfortable living places that also have architectural quality, cultural and historic heritage. These and other aspects have contributed to a sustainable behaviour and tourism attraction, which does not happen in recent residential areas. However, existing buildings in historic centres have many constraints which associate them to problems and make them less attractive, such as the proximity between buildings, less sun exposition and many others.*

This paper reports on a research project in which a toolkit with 50 parameters was developed to support decision-making in old building refurbishment projects in historic city centres. Each parameter includes technical regulations, constraints and best refurbishment practices. All solutions proposed by a parameter are ordered in 5 levels from the least to the higher sustainability benefits. The article describes a connection between the toolkit parameters about building localization aspects and their application as constraints during refurbishment works. In another perspective, it is shown the contribution of these parameters as good practices for living in city centres, tourism interest and building selection aspects for renting or buying.

The methodology adopted in the study comprises a case study involving the consultation of a set of 7 building refurbishment project designs. All project designs analysed do not present full information description in the majority of localization parameters of the toolkit, such as public transport, parking cars, commercial or services areas, technical infrastructures conservation, sports and gardens areas, and land reutilization. Some of the information on the building project designs analyzed were possible to ascertain through "in situ" research and part of the buildings has good location, proportional sustainability benefits and easier management practices during refurbishment works. The results suggest a lack of interest in the provision of relevant information for the part of design consultants concerned with building refurbishment projects. This aspect needs to be tacked in order to promote more sustainable construction practices and, consequently, a more efficient functioning of this segment of the construction market.