
PREFACE

This issue contains selected papers presented at the International Conference on Harmonisation between Architecture and Nature (Eco-Architecture), held in Spain, organised by the University of Alicante and the Wessex Institute of Technology.

This successful series of meetings started in the New Forest in England, home of the Wessex Institute in 2006, and has been held in different locations since then.

Eco-Architecture involves ideas such as using the minimum energy at each stage of the building process, including the amounts required during the extraction and transportation of materials, their fabrication, assembly, building erection, maintenance and eventual future recycling.

The minimisation of energy consumption is one of the most important aspects of Eco-Architecture. It accounts for 40% of total primary energy consumption. A significant reduction of energy gains and losses through the building envelope can be achieved in air conditioning. Flow control of air renewal and air infiltration through the envelopes are critical parameters that must be applied with quality criteria and good building. Solar gain control through glazing, climatology and façade orientation, have to be carefully considered in architectural design.

In order to predict the actual behaviour of dwellings during the design process, simulation tools need to be applied to calculate their energy demand taking into consideration users' behaviour. The buildings must have the proper features to ensure low energy consumption to conform to national policies. Research in energy rehabilitation of buildings is also carried out through simulation tools to determine the optimum techniques of intervention.

An important feature of Eco-Architecture is that the design ought always to adapt to the environment, learning from nature.

Eco-Architecture is very multidisciplinary by definition, attracting in addition to architects, many other professionals. This is reflected in the contributions published in this issue, authored by engineers, physical scientists, planners and other practitioners.

The papers presented at all Wessex Institute Conferences are archived in the Institute's eLibrary (witpress.com/elibrary) where they are available in open access format to the international community.

*The Editors
Alicante, 2016*