

Eco-Architecture

Harmonisation between Architecture and Nature

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Preface

This book contains the edited papers of the First International Conference on Harmonisation between Architecture and Nature (ECO-ARCHITECTURE 2006), which took place at the Wessex Institute of Technology Campus in the New Forest, UK.

Unlike the mechanistic buildings it replaces, Eco-Architecture is in harmony with nature, including its immediate environs. Decisions have to be taken on ecological grounds concerning locations, siting and orientation, as well as the well-informed choice of materials.

Eco-Architecture makes every effort to minimise the use of energy at each stage of the building's life cycle, including that embodied in the extraction and transportation of materials, their fabrication, their assembly into the building and ultimately the ease and value of their recycling when the building's life is over. The design may also take into consideration the use of energy in building maintenance and changes in its use, not to mention its lighting, heating and cooling, particularly where the energy consumed involves the emission of greenhouse gases.

Substantial savings can be achieved by passive energy systems, especially natural ventilation, summer shading and winter solar heat gain. Solar energy may be used in panel pipes for heating water and photovoltaic cells.

The development of Eco-Architecture is driven by the depletion of natural resources, especially fossil fuels and the need to preserve the balance of nature. The extensive use of steel and glass and the built-in problems of discomfort from solar over-heating and winter heat loss, has led to the widespread use of mechanical systems. Eco-Architecture is providing instead imaginative and expressive solutions driven by a generation of highly creative designs. It has important cultural as well as architectural impacts.

Eco-Architecture is by definition inter-disciplinary; it requires the collaboration of engineers, planners, physicists, sociologists, economists, and other specialists, in addition to architects. The papers contained in this book were written by different specialists and attempt to focus on the interdisciplinary character of eco-architecture.

The editors are grateful to all the authors for the quality of their papers and to the members of the International Scientific Advisory Committee as well as other colleagues who helped to review the papers.

The Editors,
The New Forest
2006

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