

PREFACE

Natural light has always played a dominant role in architecture, both to reveal the architecture of the building and to create a particular atmosphere, as well as to provide the occupants with visual comfort and functional illumination. The optimal use of daylight in buildings was, at the time of cheap energy, often seen as a superfluous design constraint. Illuminance deficiencies in the building were corrected with artificial lighting. The oil crisis and subsequent increase in energy prices, and now the even greater awareness of the impact of energy production on the global environment, has given an impetus to energy-conscious design.

With the growing interest in energy-conscious design in general and solar architecture in particular, the importance attached to energy use for artificial lighting in the non-domestic building sector has grown as well. It is estimated that about half of the energy used in non-domestic buildings goes to artificial lighting. Waste heat from luminaires in winter may contribute to heating, but in summer energy is often wasted getting rid of surplus heat from luminaires by means of air-conditioning systems. No wonder that daylighting has become, next to passive solar heating and passive cooling, a major topic in energy conscious design, and therefore, a major issue in the Commission's Solar Energy and Energy Conservation R&D Programmes.

In an emerging design technology such as daylighting, it seems prudent to start by assessing the state-of-the-art. To this end a team of 25 European experts, whose names are listed in the acknowledgments, have worked together to collect, select, evaluate and sometimes further develop the material from which they finally drafted the contents of this book. Their work represents a significant achievement.

Meanwhile, the Commission's effort to make progress with the development of the technology has continued. Research projects are under way in three domains :

- availability of daylighting data
- further development of daylighting design and control technology
- development of daylighting components.

However, the design of new buildings which make increased use of daylighting will not stand still pending the development of new strategies. This book provides designers with an essential tool; one which will be strengthened in the future as the results of current European research become available.

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