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Book review: Daylighting handbook I

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**Book review: Christoph Reinhart (2014), Daylighting Handbook I. 200pp. Paperback \$38.00
ISBN No: 978-0692203637**

The Daylighting Handbook I is described on the inside cover as the first of a “series of volumes on daylighting and other sustainable design concepts”. This first volume has the subtitle ‘Fundamentals - Designing with the Sun’. As the author makes clear in the preface, the themes that comprise this volume are based on two decades of research and a decade of teaching daylighting concepts to architectural students and practitioners. Thus the content and organisation of material in the Handbook has its origins in the lecture theatre - and is none the worse for that. Consequently, the structure is quite different from the majority of textbooks, and the word ‘Handbook’ in the title is therefore well chosen. The Handbook is divided into two parts. The first is called ‘Fundamentals’ and has chapters on: ‘Designing with Daylight’; ‘The source’ (i.e. the sun); ‘The Sensor’ (i.e. the human eye); and, ‘Massing Studies’. The chapter headings are broadly indicative of the content. For example, the chapter titled ‘The Sensor’ begins with an overview of the optical properties of the human eye. This serves as the link to a brief section on basic photometry, which in turn leads to material on: light source spectra; the measurement of luminance using high dynamic range imaging; and, the non-visual effects of light on humans. This is indeed illustrative of the eclectic nature of each of the chapters in the volume. In the chapter titled ‘Massing Studies’, examples illustrating daylighting potential make use of both rule-of-thumb methods and climate-based daylight simulation intermixed rather than segregating the two approaches. Thus the reader is rightly reminded that simulation should not be embarked upon without first having an appreciation of the basics of daylighting evaluation.

Some readers - particularly those expecting a more textbook style of presentation - may wish for a more exhaustive treatment of topics, and perhaps also a more ‘traditional’ organisation of material. This reviewer, however, is largely sympathetic to the approach taken by Professor Reinhart for this volume. Daylighting design and evaluation have always been endeavours requiring a wide set of skills. The emergence of new simulation and measurement possibilities, in addition to the new considerations regarding non-visual effects etc, have significantly widened what was already an eclectic and heterogeneous skills set. The Daylighting Handbook I does an admirable job in trying to accommodate the many and varied topics which the student and practitioner need to have some familiarity with. Inevitably, some readers may disagree with the author on the conflation of particular ideas into largely thematic chapters. Nevertheless, within these chapters a coherent narrative flow is largely maintained, which makes for an enjoyable read. Though for many this will be a book to dip into frequently rather than read cover-to-cover in one sitting.

The second part of the Handbook ‘Designing with the Sun’ has chapters titled: ‘Where is the Sun?’; ‘Static Shading’; and, ‘Physical Models’. As was the case with the first part, the chapters contain a broader range of material than their titles might suggest. Especially useful for educators are the additional items of information regarding, say, the effort (in hours) and the expenditure (in US\$) to create the same physical model by three methods: hand-cut; laser-cut, and by 3-D printing. These and other similar ‘extras’ make the Handbook invaluable for educators - especially those looking to create a new course or revise an existing one. Students will also find the handbook a useful supplement to their existing/recommended course material. On that basis, and given its reasonable cost, the Daylighting Handbook I is warmly recommended to educators and students alike. Practitioners may also find it a useful book to have on their office shelf.

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