Book review: Daylighting handbook I

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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 then 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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