

Book Review

Cornelie LEOPOLD: *Geometrische Grundlagen der Architekturdarstellung*. 3rd edition, Verlag W. Kohlhammer GmbH, Stuttgart 2009, 268 p., ISBN 978-3-17-020884-1.

The author is teaching Descriptive Geometry and Perspective to students of architecture at the Technical University of Kaiserslautern, Germany. Ten years after the release of the first edition, Cornelie LEOPOLD's book about the geometric fundamentals of architectural representation has meanwhile become a classic in German speaking countries.

The book is full of useful geometrical sketches and drawings (the quality of which has improved throughout the different editions) that explain geometric context quite clearly. Additionally, black and white photographs of architectural buildings complete the theory. LEOPOLD's book is – in a positive way – conservative and allows the reader to learn geometric concepts in a traditional and approved way.

In the introduction, simple geometric concepts are presented that are important for architects. Furthermore, a brief historical review is given and the concepts of human visualization, especially of spatial imagination, are discussed. In Chapter 2, general graphic representation methods are presented and compared. In Chapter 3, parallel and central projection of planar figures lead to the concept of affinity and collineation. Orthographic axonometric projection and central projection are later on described in detail in Chapter 12 and 13. Chapter 4 describes the principles of (oblique) axonometry, Chapter 5 those of dedicated orthographic projections. In Chapter 11, the important special case of topographic projection is considered. The Chapters 6–9 deal with polyhedra, curved surfaces and solids including their intersections and – if possible – with their development. Light and Shadow are topics of Chapter 10.

The development of architectural software nowadays allows to design buildings with surfaces of high geometric standard if and only if the user has deeper geometric understanding. This insight can be achieved by comprehending the principles that are explained in a well-tried manner in LEOPOLD's book. However, one must of course not expect that the 268 pages of the book cover all advanced geometric topics of modern architecture. The reading of this book should stand at the beginning of a profound geometric education of architects.

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<http://www.uni-ak.ac.at/geom/>