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Grading for Landscape Architects and Architects

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**Book review**


*Grading for Landscape Architects and Architects* is a compilation of nine chapters that provides a valuable addition to the current literature of site grading and drainage. With a foreword by Peter Walker, the book covers the entire spectrum of site grading design, including landform, grading calculation, digital tools, stormwater management, site construction, and landscape stabilization. The book closes with project examples, exercises, and solutions.

Although the book is not intended to be an instructional text, it is an excellent resource for landscape architecture construction courses. As a suggested reference, it promises to be helpful in preparation for the U.S. Landscape Architect Registration Examination (LARE). Besides being beneficial to landscape architecture students and professionals, the book will be appreciated by architecture and engineering students who seek a fundamental knowledge of site grading or are interested in the latest grading practices.

This book is distinguished from many other grading texts by being one of the few that comprehensively introduces the application of computer technology to site grading. In addition to early programs such as AutoMap and AutoCAD Civil 3D, more recent digital grading tools are discussed. Chapter 6, “Digital Site Grading,” elaborates on the applications of the Global Positioning System (GPS) and Geographic Information System (GIS) in site survey and contour mapping and various 3D models with associated software packages. Chapter 8, “Grading on the Construction Site,” further adds the application of GPS in site stationing and remote control of construction.

In addition to being technological savvy, several other features of this text deserve attention. First, the book is structured in a sequence of history, theory-method, tool-education, practice, which makes it easy to follow. Throughout, the book draws a parallel between the development of grading practices (e.g., accuracy and amount of effort) and innovations in tools and advances in technology. The book provides readers with a broad range of knowledge on grading with more breadth than depth. It reaches back into history to present myriad landform analysis and presentation methods that range from 15th-century mapping techniques to the later physical models to contemporary 3D virtual terrain models. Along with these discussions, grading methods and principles are integrated with project examples.

Second, the book approaches a wide audience by covering diverse aspects of grading, as explored through teaching, research, and practice. From these different perspectives, the book unveils the importance of grading as a design language that can enrich the quality of design. Regarding teaching, GPS-powered landscape architecture survey courses are introduced that cover digital site data collection, manipulation, and mapping. Some commonly experienced problems are explained with solutions provided. Because research and practice are interrelated in nature, their applications are explored through projects such as a landfill acoustic barrier analysis, a delta restoration time-series study, and visual simulation of quarry excavation alternatives. Chapters 8 and 9 and the Appendix are perhaps most fascinating to landscape architecture students because they tie together information from earlier chapters and demonstrate how grading is done on the ground.

Third, the book builds a rich image collection to illustrate grading tasks at different stages. In addition to photographs of built conditions, there is a valuable compilation of sketches that reflect original design concepts and images of construction in progress. Different types of drawings (e.g., plan, section, bird’s eye-view perspective) help reveal the design intents. For instance, Chapter 2, “History of Site Grading,” shows an ancient ball court in Phoenix, Arizona, USA. A plan view and a 3D isometric drawing vividly recreate the original topography and site design. Chapter 3, “Landform,” presents the 21 most often encountered landforms in design. Monochrome drawings and 3D terrain models make sharp presentations. Chapter 7, “Landscape Stabilization,” shows bioengineering methods in stream bank stabilization and geotextile retaining walls during construction. Overall, design drawings coupled with images of different construction stages effectively convey grading concepts, terminologies, principles, and formulas.

Given the well-conceptualized organization and rich array of information provided, there remain a few suggestions to be offered. The first suggestion is that the sequence of some chapters could be better orchestrated. In particular, Chapter 6, “Digital Site Grading,” could be placed after Chapter 4, “Site Grading 101,” instead of following Chapter 5, “Stormwater Management and Site Grading.” Chapter 4 primarily focuses on basic grading calculations but also overlaps Chapter 6 regarding digital tools. It seems logical to begin with the classic methods in Chapter 4 and then introduce more recent tools in a continuous fashion. In addition, some sections in Chapter 6 and Chapter 8, “Grading on the Construction Site,” could be integrated or reallocated. For example, “Data Mapping with GPS” in Chapter 6 has similar contents as “Staking Out with GPS Instruments” in Chapter 8. Further, “GPS Remote Control in Site Grading” (Chapter 8) could be used as a practical example after the description of GPS data mapping in Chapter 6. In this manner, the overall structure of theory-method-practice would be maintained.

The second suggestion is to have a better balance of contents, particularly the classic practices versus new applications. For example, in Chapter 5 on stormwater management, despite the pioneering status of European countries and ample literature in this area, only 12 pages are devoted to this chapter, making it the second shortest chapter of this book. In contrast, generous ink is dedicated to specifications of soil excavation machineries (Chapter 8, pp. 158–168), although these details are less relevant to the focus of this book.
The last suggestion is to add more discussion on the relationship between site grading and architecture and other structures. As the book title suggested, it also intends to serve architecture students and professionals. This point is certainly mentioned (e.g., p. 86), while less emphasized. Optimistically, the book already presented diverse topics and projects, and it hence reveals great potential to better relate itself to architects and professionals alike in future editions.

In summary, *Grading for Landscape Architects and Architects* is a timely book that focuses on the current trend of using digital tools in site grading and construction. Equally, the book emphasizes the utility and importance of traditional contour mapping methods. Landscape architecture and architecture students who seek an overview of site grading shall benefit substantially from this book. The book is also recommended for practitioners who are fascinated by new grading technologies. Finally, this book serves as useful reading for landscape architecture construction classes and LARE preparation. Published by Birkhäuser Verlag AG, a German edition for this book is also available.

**Reference**


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