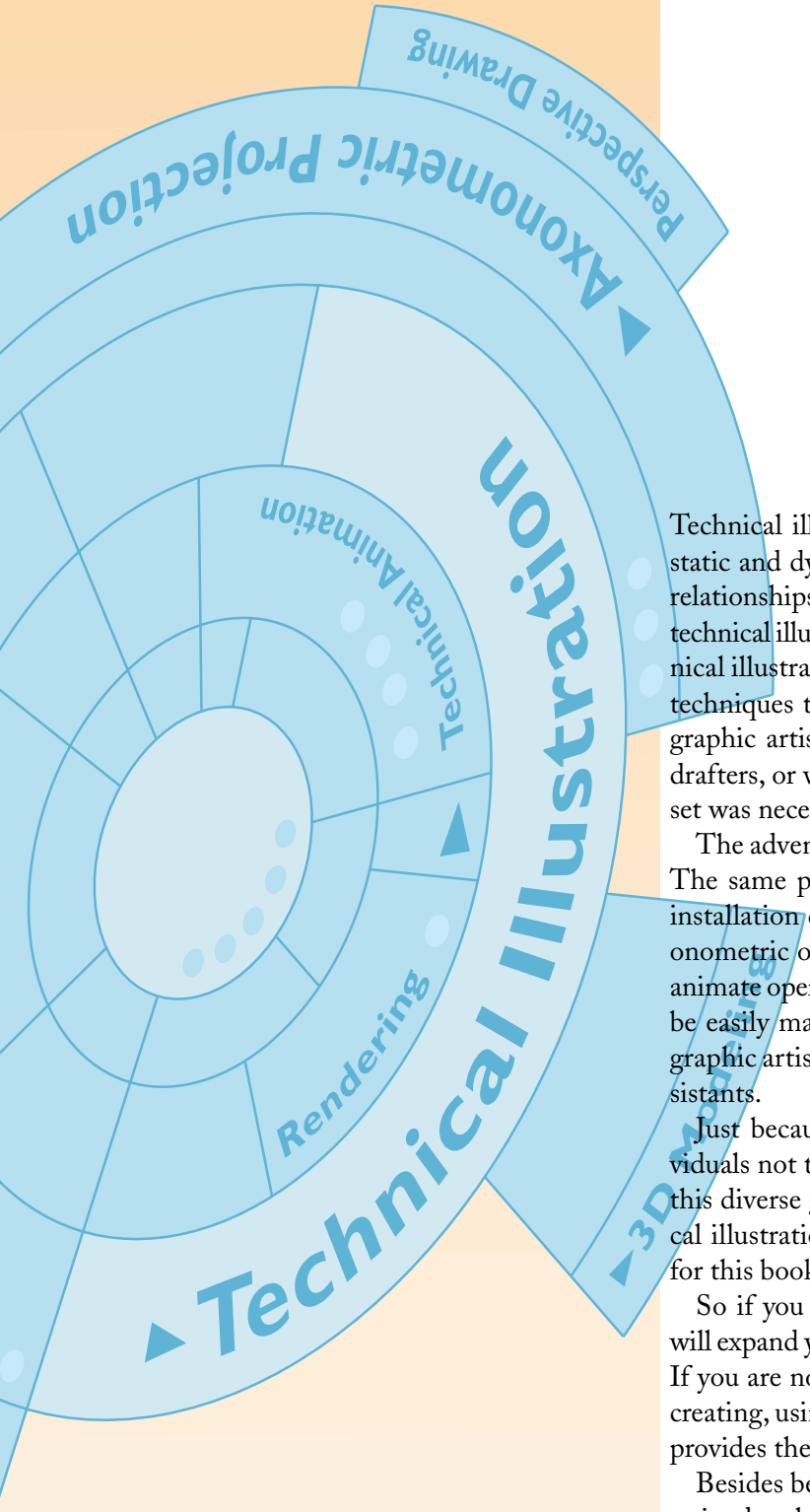

Preface

Technical illustration is a field of graphic practice that uses static and dynamic images to explain the nature of technical relationships. There was a time when the people who made technical illustrations were referred to in their job titles as "technical illustrators." As such, they used a unique set of tools and techniques to produce their work. They were different from graphic artists, commercial artists, technical photographers, drafters, or videographers because a completely different tool set was necessary to do their jobs.

The advent of flexible digital graphic tools changed all that. The same program used by an engineer to design a piping installation can be used to create dimensionally accurate axonometric or perspective pictorials, render realistic views, or animate operations. This means that technical illustrations can be easily made by engineers, technologists, technicians, and graphic artists—and even by managers and administrative assistants.

Just because technical illustrations can be made by individuals not trained as technical illustrators doesn't mean that this diverse group doesn't need greater knowledge of technical illustration considerations. That is, of course, the reason for this book.

So if you are a technical illustrator by training, this book will expand your understanding of the subject's subtle nuances. If you are not specifically prepared as such, but find yourself creating, using, or evaluating technical illustrations, this book provides the information you missed.

Besides being digital artists, the authors are also classically trained technical illustrators. What does that mean to you, the reader? It means that in the pages of this book you'll find more than simple software tricks. You'll acquire the in-depth knowledge that in time will prepare you to discover your own

tricks. You'll learn how to represent *any* geometry, in *any* view, using *any* tool, rendered using *any* technique, for *any* reproduction method, and when you do, you'll be the *complete technical illustrator*.

There isn't just one technical illustration tool because illustrations are made from such a wide range of data—sketches, photographs, engineering drawings, CAD data, raster scans, real objects that you measure, and your boss's verbal descriptions. Add to that the fact that technical illustrations appear in manuals and books, are displayed in Powerpoint presentations, are included in CD-ROM training, and are passed around on company Intranets. You have to match the tool to the data and its intended use.

We have based this book on the tools that we, the authors, use every day in our work. The actual software programs are less important than the methods of planning, executing, and evaluating digital technical illustrations. Those of you who use different software, or continue to use manual methods, should look past specific software references. If you *understand* raster, vector, and modeling methods, you'll have the flexibility to *apply* those methods as tools change.

The Complete Technical Illustrator really took 30 years to write. We hope it becomes the authority for the study, teaching, and practice of presenting technical information in a visual form. The authors would like to thank the many designers, engineers, architects, and technical illustrators who have graciously provided examples to supplement Jon's and Greg's own work. We hope this book becomes your dog-eared technical illustration companion.

Many people contributed to this project. Kelly Lowery and Melinda Dougharty of McGraw-Hill provided the direction and encouragement to keep the project on track. The manuscript was reviewed by Kurt Becker (Utah State University), Tom Bledsaw (ITT Technical Institute), Michael R. Aehle (St. Louis Community College at Meramec), Rick Vertolli (Cal State–Chico), Adam Smith (Rhode Island School of Design), Ernest B. Ezell, Jr. (Bowling Green State University), and William A. Ross (Purdue University). Their careful reviews were greatly appreciated, and many of their suggestions are reflected in the pages of this book. We would also like to thank those illustrators who contributed to and whose work appears in the case studies. Also, we thank the Microelectronics Modeling Group comprised of Nate Gelber, Mike Kelley, Ryan Graham, and Jay Hibler whose work appears throughout this text. Your willingness to share your illustrations and insight has contributed greatly to the practicable nature of the finished product. Special thanks go to George Ladas, K. Daniel Clark, Kevin Hulsey, Andre Cantarel, Richard Tsai, and Miller Visualization, Knott Laboratory, Daniels & Daniels, and Vector Scientific for their case study contributions. Finally, the authors would like to thank fellow and former students, illustrators-in-arms, and their clients for support and encouragement.