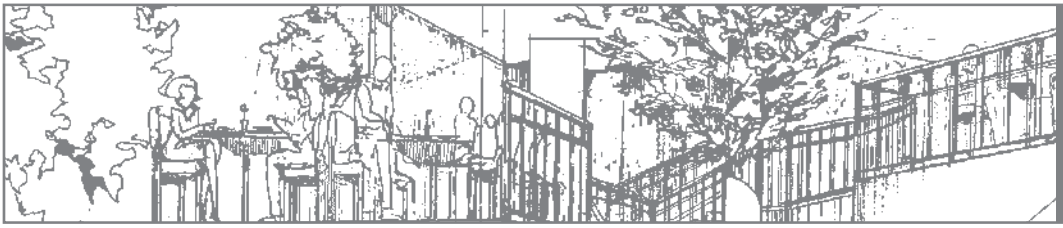

1

Design as Communication

Ideas and plans are formed in the interior designer's mind, but to be transformed into reality, they have to be communicated to others. Although a designer may have a great idea, it must be effectively communicated or it will remain just an idea and never move beyond conception. Interior designers and other professionals in the building industry use drawings as the primary means of developing and sharing their ideas. Interior designers and architects do a lot of sketching and drawing. They develop their skills in freehand drawing by sketching existing objects and spaces in the environment (Figure 1.1).

These same skills of observation and sketching are then used in visualizing designs for new spaces and objects (Figures 1.2 and 1.3).

This process of brain, eye, and hand coordination is an intrinsic part of design. Architectural drawings can be grouped into three basic types: drawing as idea generation, drawing as a design and presentation medium, and drawing as a guide for the construction process. There are distinct differences between each of these types, yet they all contain some common drawing tools, techniques, standards, and graphic language.

Design communication is also influenced by issues that regulate the building industry, such as building codes that protect the health, safety, and welfare of the public. Currently, other issues, such as universal design, user participation, sustainability, globalization, LEED (Leadership in Energy and Environmental Design), and Building Information Modeling (BIM), affect the way designers communicate their ideas.

DRAWING FOR IDEA GENERATION

Idea generation assists the designer in working through and visualizing the solution to a problem. Designers use many different types of drawings to generate and bring to reality their creative ideas.

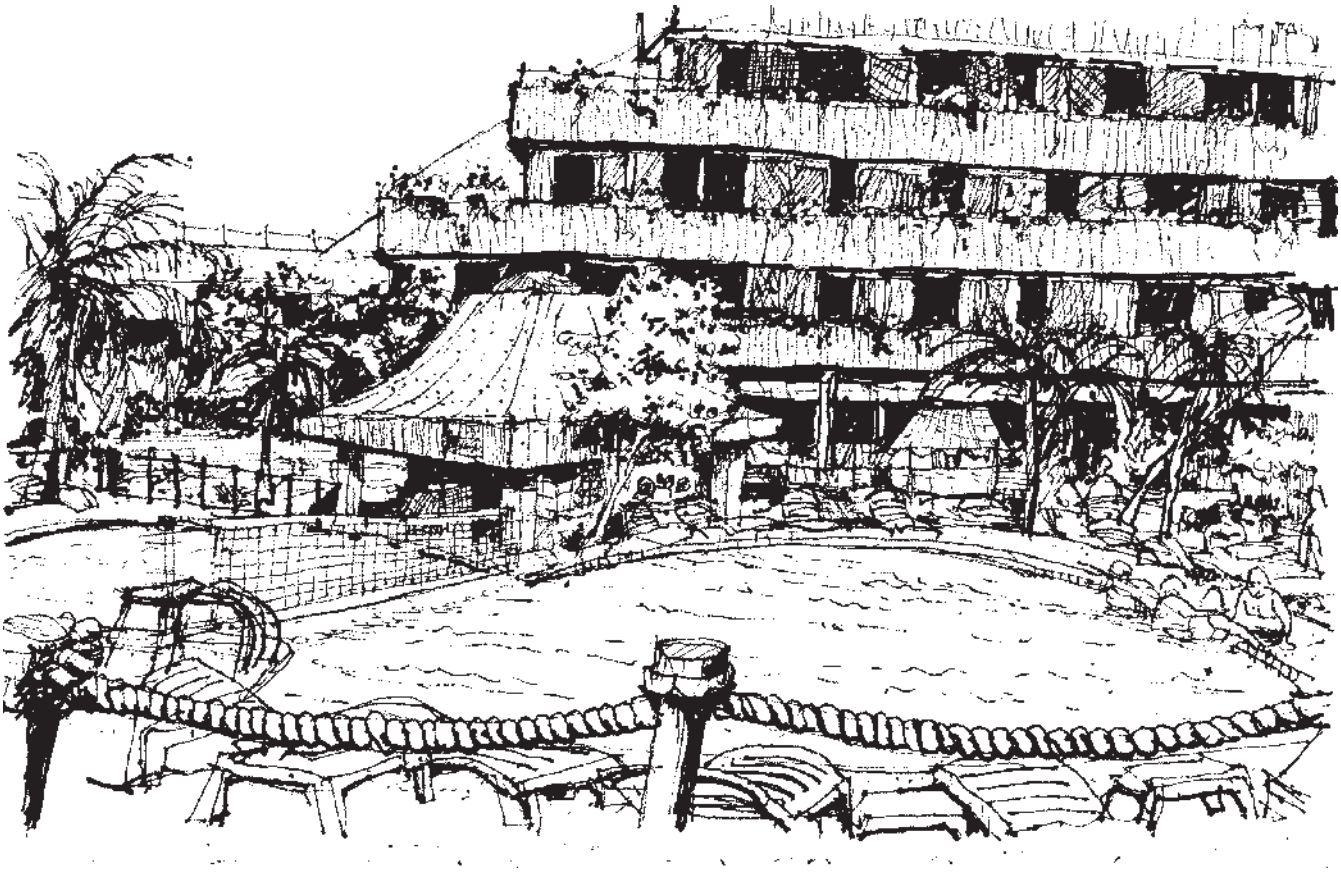

FIGURE 1.1. Sketching existing objects and spaces help designers develop their freehand drawing skills.

These drawings can be in the form of quick freehand sketches illustrating different kinds of views (Figure 1.4).

Many times these types of drawings are not shown to clients, but are used solely to help designers shape their ideas into a visual form. The drawings are not intended to be the final solution to an idea, but rather to allow the designer to explore alternatives or refine an idea. They also help to record designers' two- and three-dimensional thinking. These concept sketches and drawings are part of a sequence of design steps referred to as the "design process" (Figure 1.5). See Chapter 5 for more detailed information on "Concept Development and the Design Process."

DRAWING AS DESIGN AND PRESENTATION MEDIA

Once a designer has developed an idea to a point that visual communication is needed to show it to the client or others, new drawings must be created for use as presentation media. These drawings depict the parameters of an idea in more detail, yet are not totally worked out to a point that they can serve as an accurate construction guide. Design drawings can range from pictorial renderings of an idea (Figure 1.6) to more detailed plan views of a building's interiors (Figure 1.7). In the first example, a rendering is often done as a perspective view (Chapter 4), which resembles a photograph.

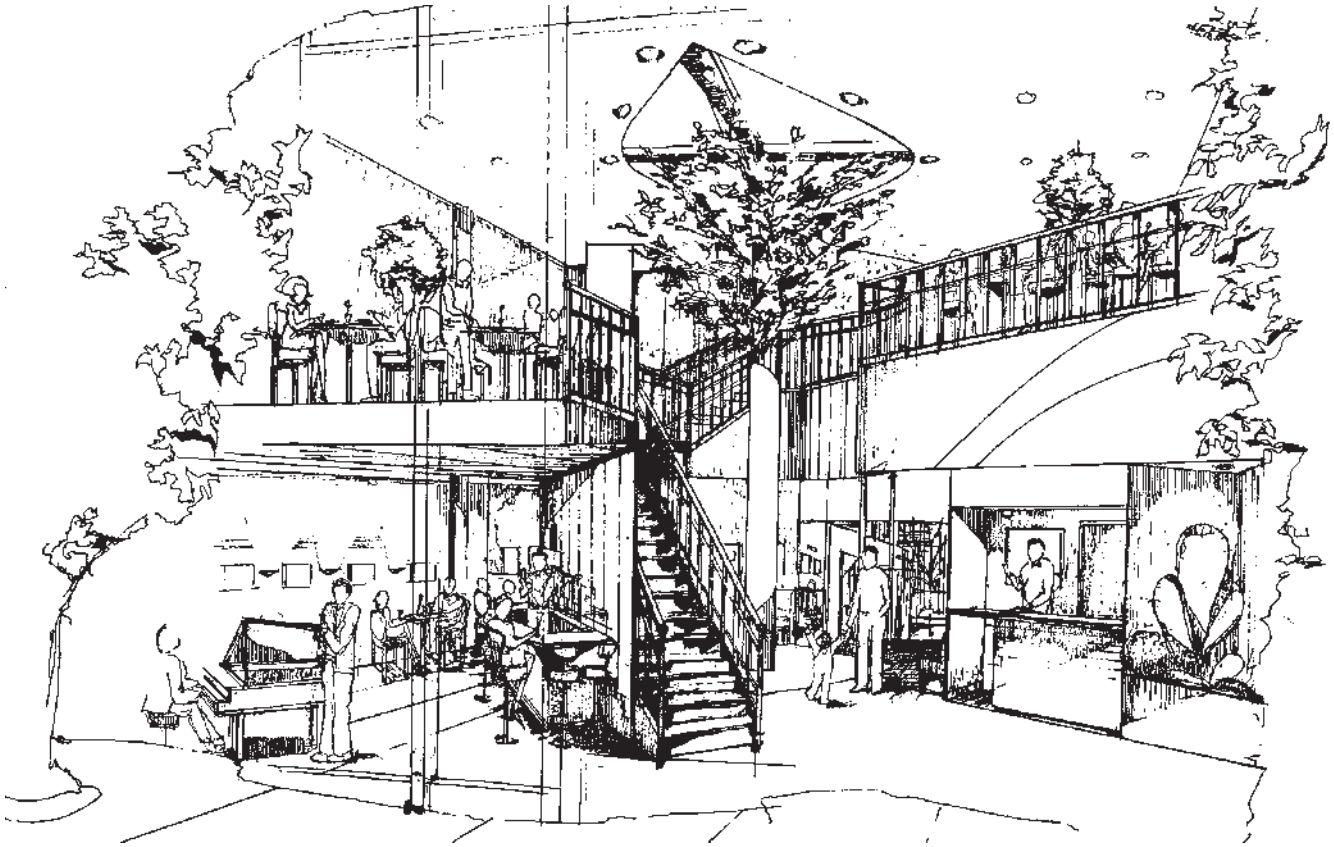

FIGURE 1.2. Designers can use their freehand drawing skills to visualize and sketch new spaces and objects.

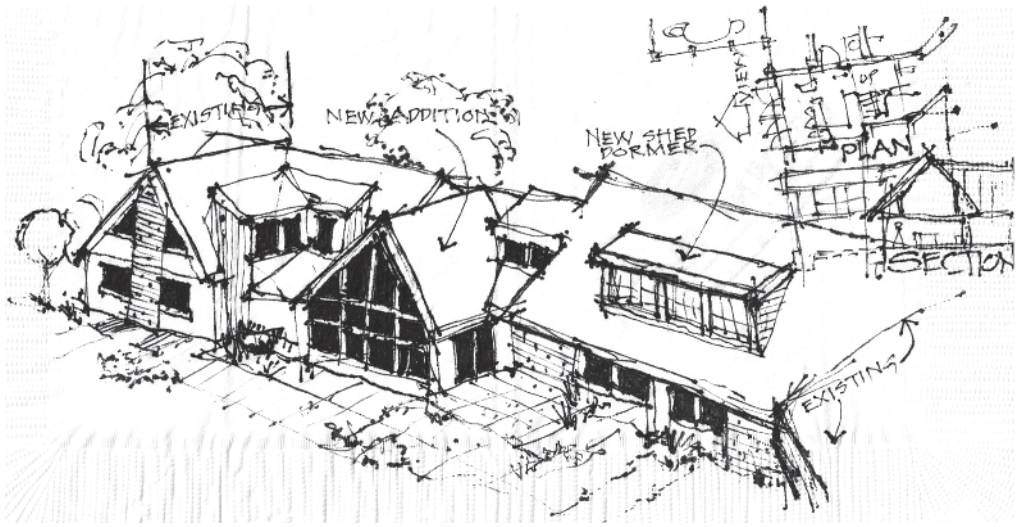

FIGURE 1.3. An example of a sketch for an addition to a residence that was drawn on a napkin in front of the client.

The receding lines of an object are purposely drawn to a distant vanishing point—similar to the effect of railroad tracks that appear to touch at the horizon. Design drawings are also done using techniques other than perspectives, such as the isometric shown in Figure 1.8. Different types of drawings are discussed further in Chapter 4.

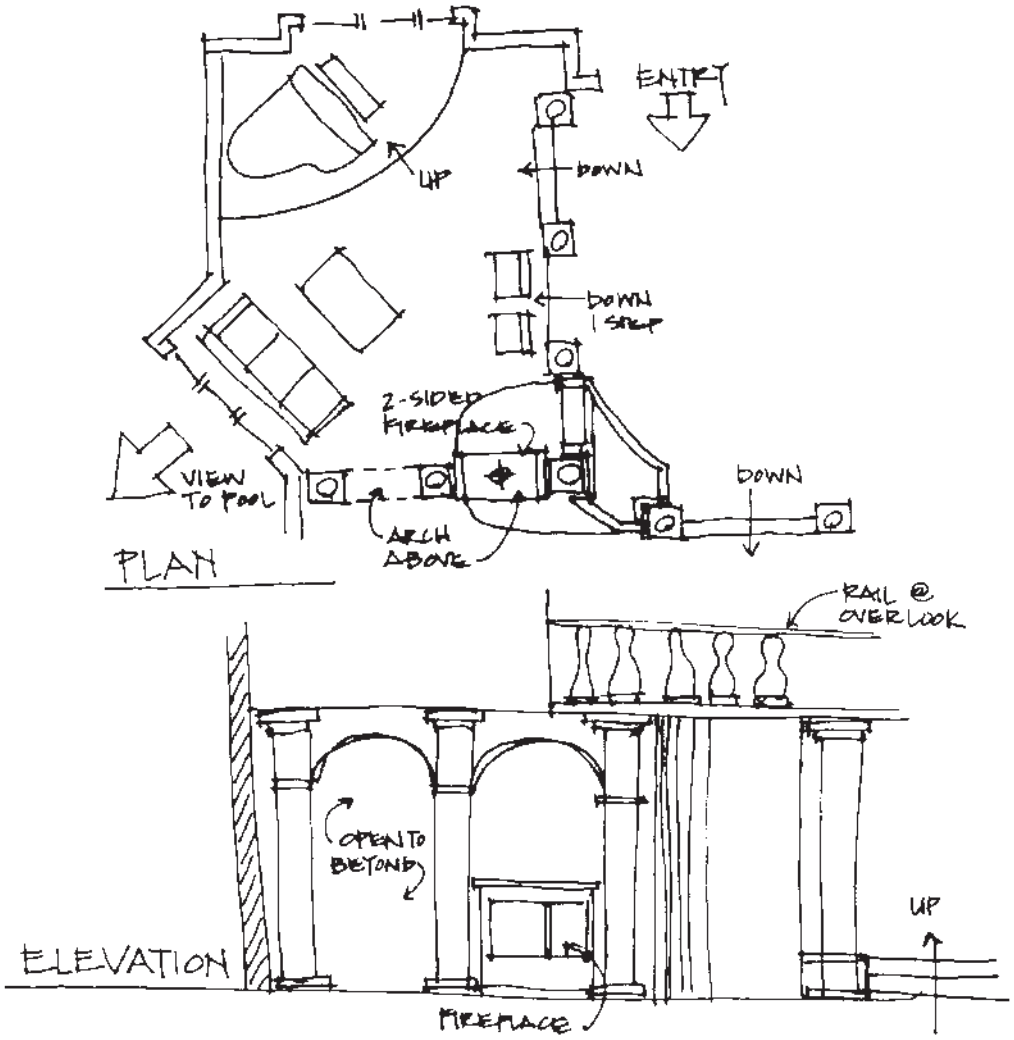

FIGURE 1.4. Quick freehand sketches, such as this floor plan and elevation, can be used to bring designers' creative ideas to reality. Courtesy of Courtney Johnston

DRAWING AS A GUIDE FOR CONSTRUCTION

Drawings serve as the prime means of communication for constructing buildings, interior spaces, cabinets, furniture, and other objects. Construction drawings are scaled, detailed, and accurate representations of how an object looks and how it is constructed as well as the materials used (Figure 1.9). The drawings follow established architectural graphic conventions to indicate sizes, material, and related information that is needed to bring the objects or spaces into reality (Figure 1.10). The builder needs clear, concise drawings that are directly related to the different views of an object, such as plans, elevations, sections (Figure 1.11), and other drawing types that are discussed in later chapters.

ISSUES AFFECTING HOW INTERIOR DESIGNERS COMMUNICATE

Interior design is a constantly changing discipline that is affected by societal, environmental, and technological changes. Issues affecting how interior designers communicate today are influenced by universal design concepts, user participation, globalization, sustainability, and digital technology as they apply to design practice within the building industry.

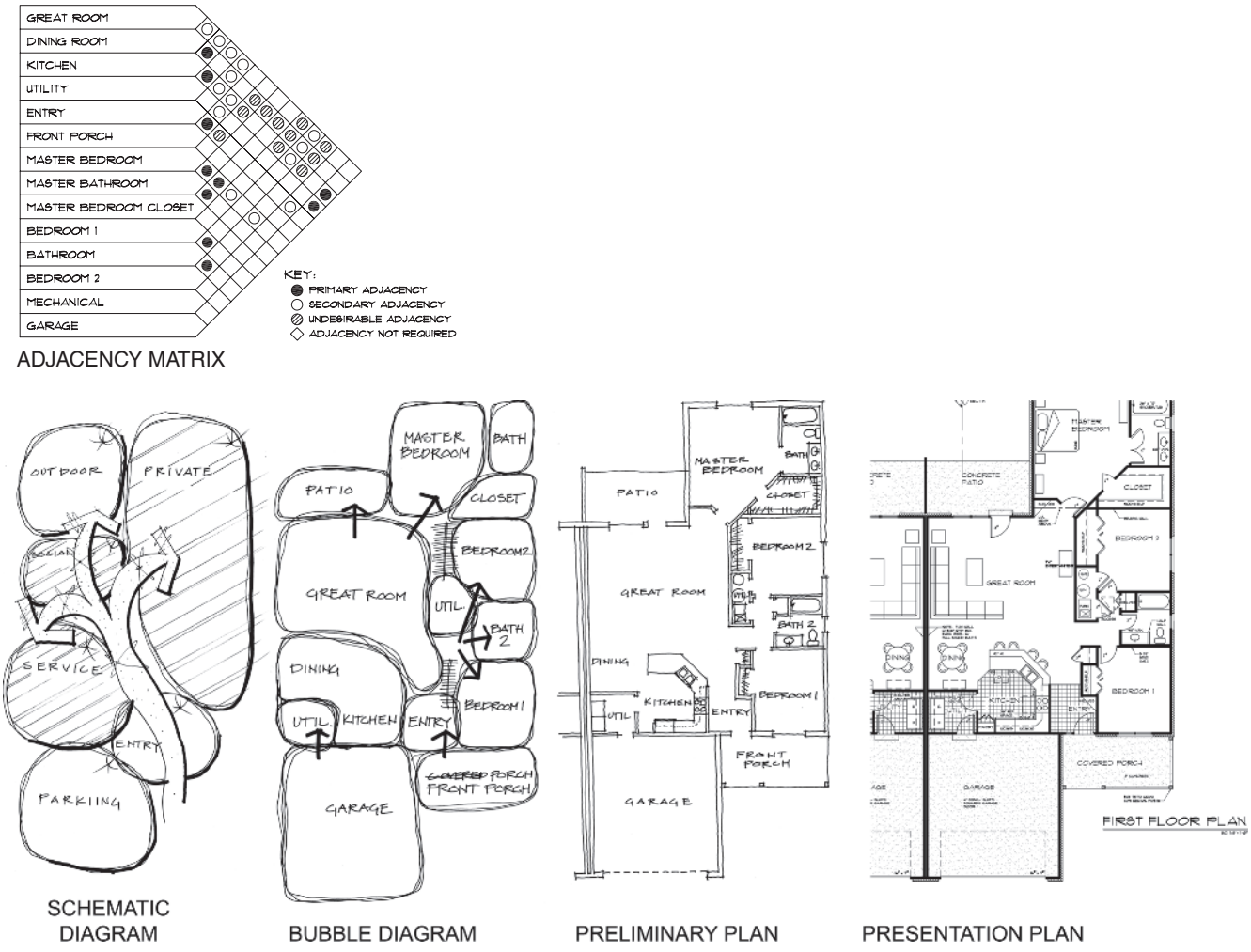

FIGURE 1.5. Adjacency matrices, concept sketches, and drawings are part of a sequence of design steps known as the design process.

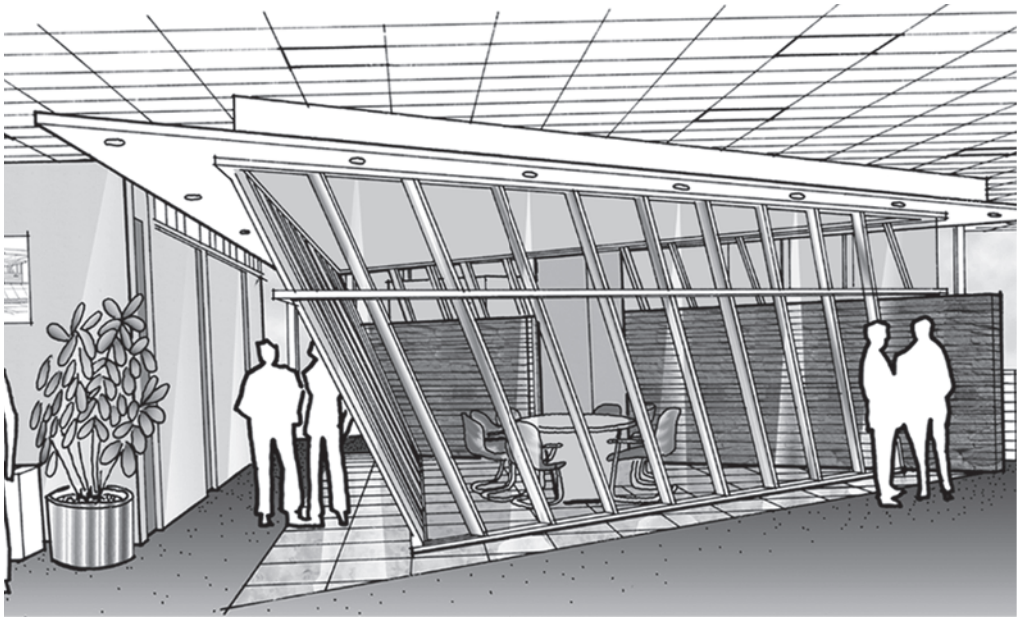

FIGURE 1.6. Design drawings, such as this pictorial rendering, show ideas in more detail.

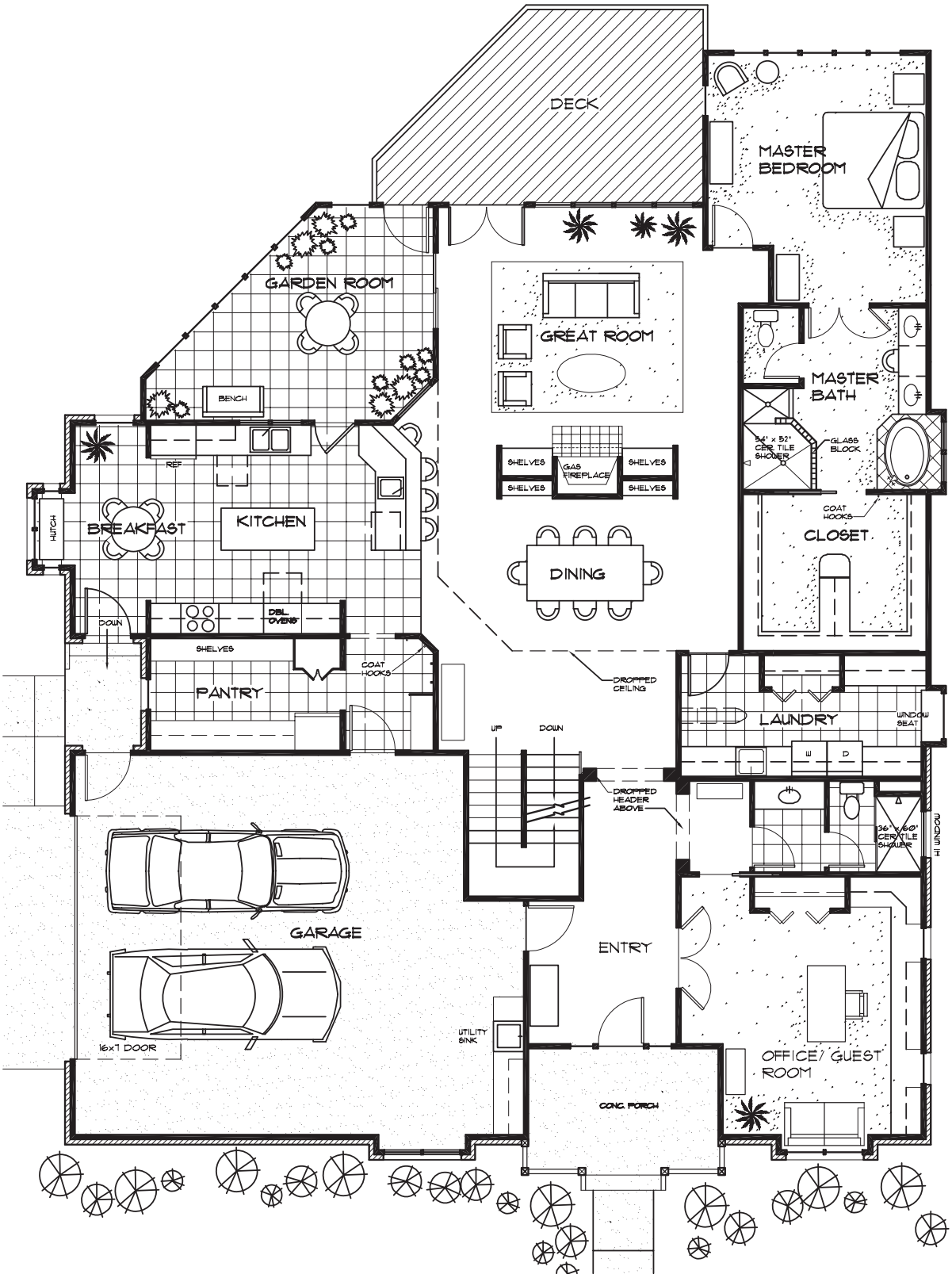

FIGURE 1.7. Design drawings can also show more detail in the form of plan views of a building.

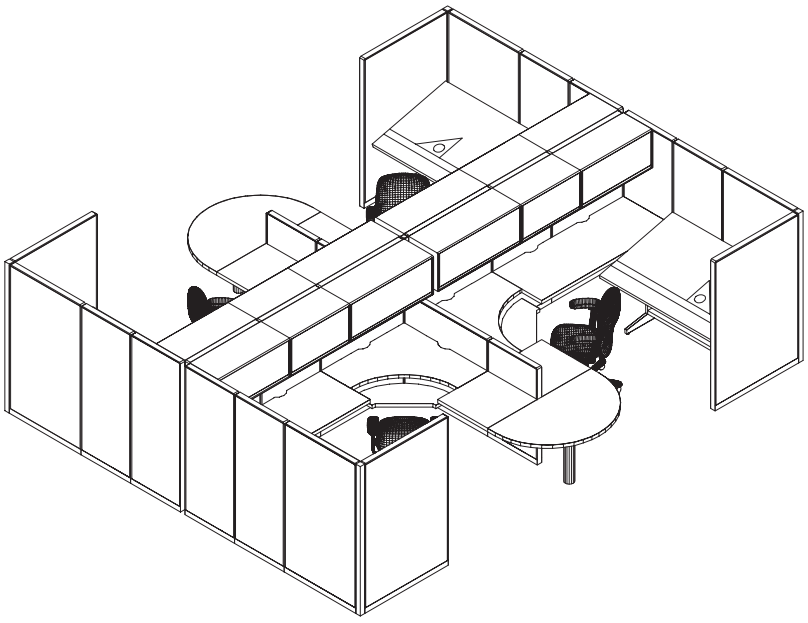

FIGURE 1.8. Design drawings can be done in a variety of techniques, such as this isometric drawing.

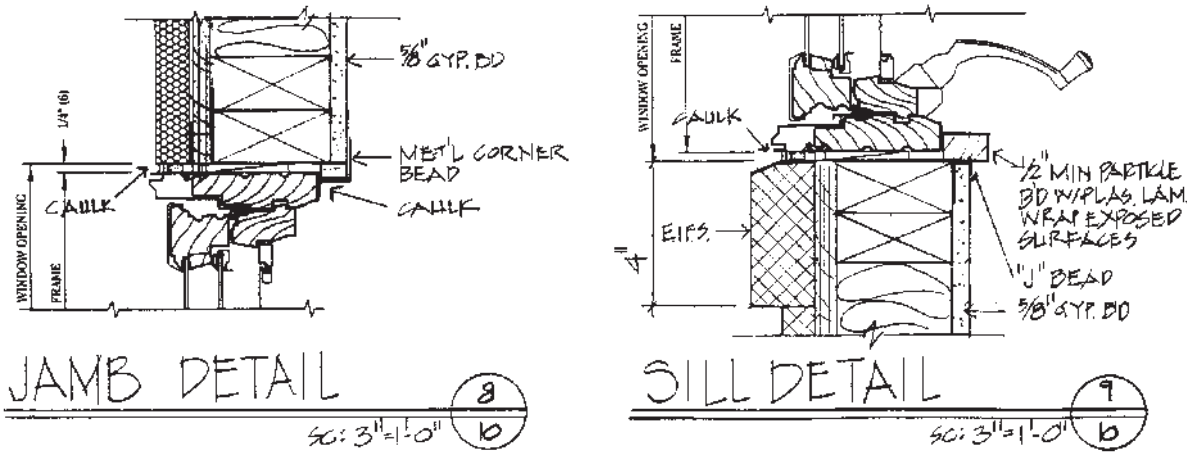

FIGURE 1.9. Drawings used to communicate how something should be constructed are scaled, detailed, and more accurate; they also show materials to be used.

Universal Design

Universal design is a worldwide belief that encompasses the design of environments, objects, and communication with the intent of serving the widest range of users. Universal design should not be used interchangeably with accessible design, which specifically focuses on people with disabilities and their right of access to entities. Universal design is more than providing minimal compliance with set accessibility guidelines and requirements. Universal design integrates accessible features into the design of the building, interiors, and objects for all people of all abilities and ages—including children, the elderly, and those with special needs. It attempts to address usability issues of spaces and

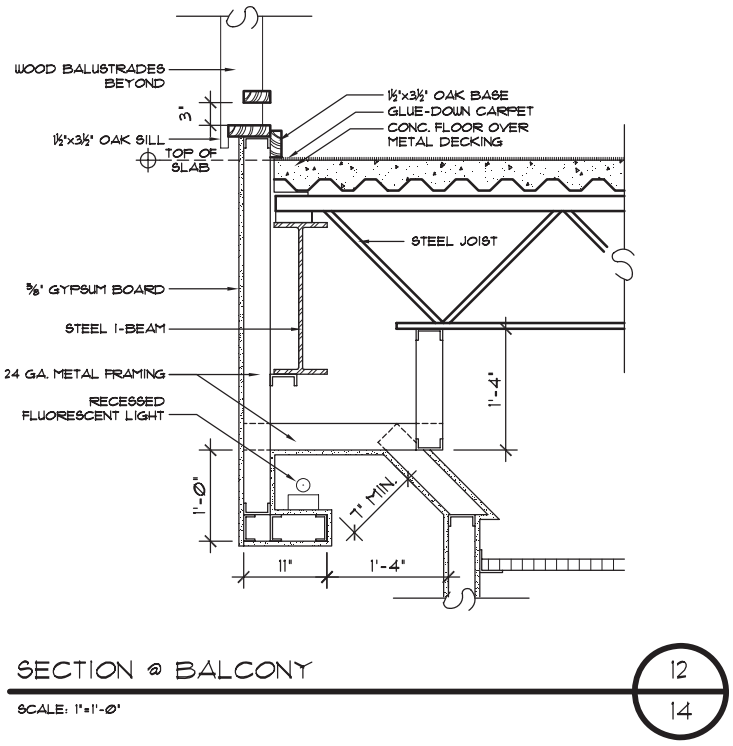

FIGURE 1.10. Designers use graphic conventions to indicate sizes, material, and related information needed to turn ideas for objects or spaces into reality.

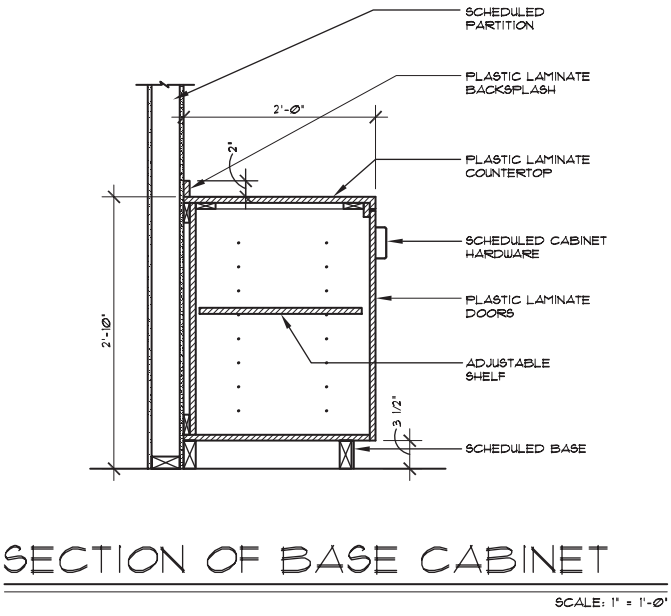

FIGURE 1.11. Clear, concise drawings of an object, such as this section, help a builder to construct the object as the designer envisioned.

equipment as opposed to setting standards and minimum requirements. Figure 1.12 illustrates an example of the international symbol for accessibility regardless of the user's abilities.

FIGURE 1.12. This is the internationally recognized symbol for compliance for wheelchair access.

The Center for Universal Design at North Carolina State University, in collaboration with a consortium of universal design researchers and practitioners, developed seven principles of universal design that were copyrighted in 1997. Funding for the project was provided by the U.S. Department of Education's National Institute on Disability and Rehabilitation Research. These principles are useful in guiding designers in the creation of environments that are accessible to all people, whether they have a disability or not. Good examples of universal design are almost invisible as they are so well blended into the design that they seem commonplace.

Seven Principles of Universal Design

1: PRINCIPLE ONE: Equitable Use

The design is useful and marketable to people with diverse abilities.

Guidelines

- Provide the same means of use for all users: identical whenever possible; equivalent when not.
- Avoid segregating or stigmatizing any users.
- Provisions for privacy, security, and safety should be equally available to all users.
- Make the design appealing to all users.

2: PRINCIPLE TWO: Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.

Guidelines

- Provide choice in methods of use.
- Accommodate right- or left-handed access and use.
- Facilitate the user's accuracy and precision.
- Provide adaptability to the user's pace.

3: PRINCIPLE THREE: Simple and Intuitive

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

Guidelines

- Eliminate unnecessary complexity.
- Be consistent with user expectations and intuition.
- Accommodate a wide range of literacy and language skills.
- Arrange information consistent with its importance.
- Provide effective prompting and feedback during and after task completion.

4: PRINCIPLE FOUR: Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Guidelines

- Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- Provide adequate contrast between essential information and its surroundings.
- Maximize "legibility" of essential information.
- Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

5: PRINCIPLE FIVE: Tolerance for Error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

Guidelines

- Arrange elements to minimize hazards and errors: most used elements; most accessible; hazardous elements eliminated, isolated, or shielded.
- Provide warnings of hazards and errors.
- Provide fail-safe features.
- Discourage unconscious action in tasks that require vigilance.

6: PRINCIPLE SIX: Low Physical Effort

The design can be used efficiently and comfortably and with a minimum of fatigue.

Guidelines

- Allow user to maintain a neutral body position.
- Use reasonable operating forces.
- Minimize repetitive actions.
- Minimize sustained physical effort.

7: PRINCIPLE SEVEN: Size and Space for Approach and Use

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

Guidelines

- Provide a clear line of sight to important elements for any seated or standing user.
- Make reach to all components comfortable for any seated or standing user.
- Accommodate variations in hand and grip size.
- Provide adequate space for the use of assistive devices or personal assistance.

User Participation

User participation is an important and integral part of the design process as designers seek to be more responsive to their clients' needs and wants in their interior environments. User participation solicits direct input form the client(s) or users during the design phase of a project. This process is a design tool that makes the client/user feel like they have a voice in the shaping of their renovated or new building project.

Designers seek user participation by communication directly with the client/users in a face-to-face conference during which the designer can simulate and sketch ideas immediately or use digital devices to compile the ideas in real time. Consumers and clients have become more aware of their environments and products. In turn, designers will continue to search for improved user participation as they create viable and personally satisfying solutions for the interior environment. Personal digital devices and computer sharing have made the input, collection, organization, and dissemination of client interaction more available and will continue to evolve as a valuable design tool.

Sustainability and LEED

The built environment has a profound impact on our natural environment, economy, health, and productivity. Because of this impact, the design, creation, and maintenance of the built environment presents both challenges and opportunities for design professionals. Sustainable design and green design have become common terminology in the design field and involve using methods and products that cause the lowest possible impact upon the ability of the natural environment to maintain its natural balance. Interior designers must practice in an environmentally responsible manner, and must advance their knowledge and application of sustainable design in order to advance sustainable practice. One way this can be accomplished is through an understanding of LEED (Leadership in Energy and Environmental Design) and the Green Building Rating System™, which was developed by the U.S. Green Building Council (Figure 1.13). This system encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria. LEED promotes a holistic building approach to sustainability by recognizing performance in five key areas of human and environmental health that includes: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

FIGURE 1.13. This is the logo for the U.S. Green Building Council, which developed the LEED rating systems.

Additionally, LEED has four different rating systems based on the nature of the project. These are LEED-OTM (Building Operations and Maintenance), LEED-BD+C (Building Design and Construction), LEED-ID+C (Commercial Interiors), and LEED-ND (Neighborhood Development). At the time of this writing, rating systems for specific building types, such as Homes, Schools, Retail, and Healthcare, and so on, are included under one of the four major rating systems, listed above.

These rating systems rate or give credits for standards in key areas of human health and environmental sustainability, such as location and transportation, sustainable site development, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, innovations, and regional priority. The rating criteria can vary for each of the rating systems as well as the facility types.

Interior designers, along with architects, real estate professionals, facility managers, engineers, landscape architects, construction managers, lenders, and government officials, are encouraged to use LEED to help transform the built environment to sustainability. Federal agencies, as well as state and local governments across the country, are adopting LEED for public-owned and public-funded buildings. Sustainable considerations within the built environment begin at the design phase of a project and are carried through in the specifications and construction drawings. It is, therefore, important that students in interior design learn how to design and apply LEED standards in an environmentally responsible manner. Sustainable issues and LEED standards are incorporated into relevant chapters where appropriate.

Globalization

Design has become more globalized as firms are getting involved in more international projects. Many firms have offices in international countries and designers at those locations. However, with today's technology, offices can be linked through digital methods for sharing project files and daily communication among the various people and cultures involved throughout the world environment. Then, as needs arise, the designers will visit the locales for direct physical involvement.

Technological capabilities assist in collecting and transmitting massive amounts of information that enable designers to share their spatial creations with other firms and their clients on a global scale. However, most international countries work in the metric scale, whereas the United States mostly still uses the U.S. (or English) units of measurement. Because of global involvement, designers may find that they have to do a project using the SI (metric) system of measurements. See Chapter 2 and the metric dimensioning system discussed in Chapter 6.

Digital Technology and Building Information Modeling (BIM)

Digital technology continues to evolve at a rapid pace in the production of new software for two- and three-dimensional modeling programs for use by interior designers and others involved in the building industry. While this book is not about any specific software, there must be some discussion of the most widely used programs and their specific details as the majority of designers are using computers in the production of design and construction drawings.

Autodesk's AutoCAD® has been the most widely used CAD program in interior design and architectural firms in the United States for the production of construction drawings. Other popular programs used by the building and design industry include ArchiCAD® (by Graphisoft) and MicroStation

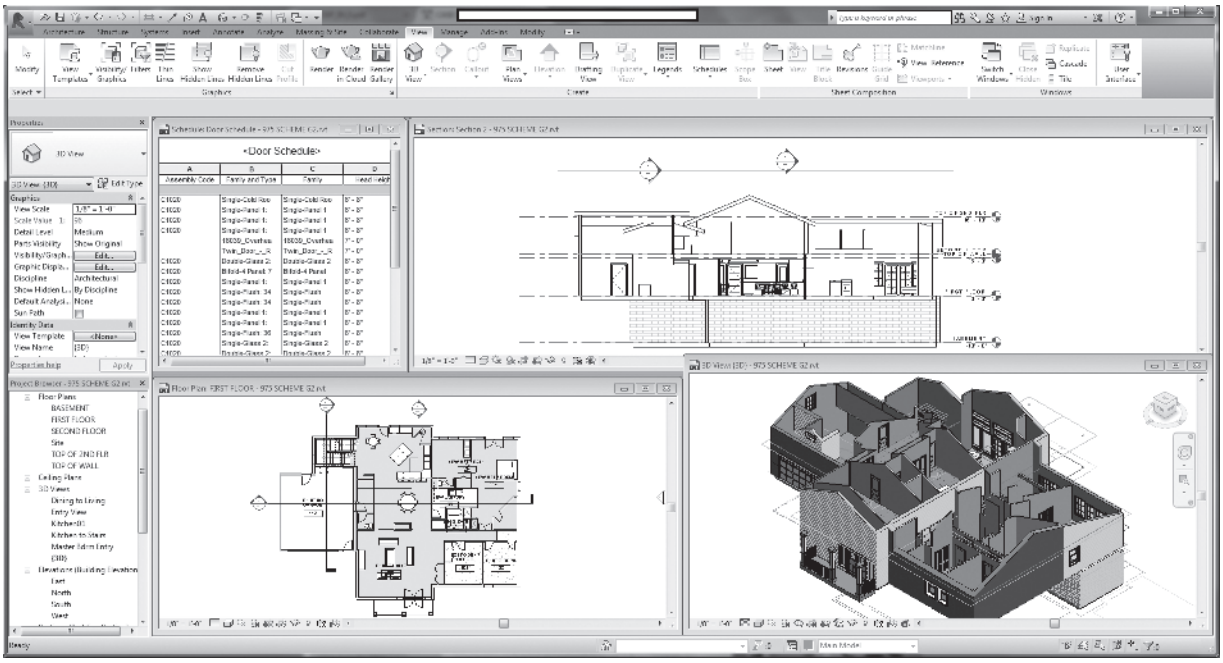

FIGURE 1.14. In this Revit® example, multiple drawings and schedules can be viewed simultaneously and revised with the changes automatically done in all views and schedules. Courtesy of Lisa VanZee

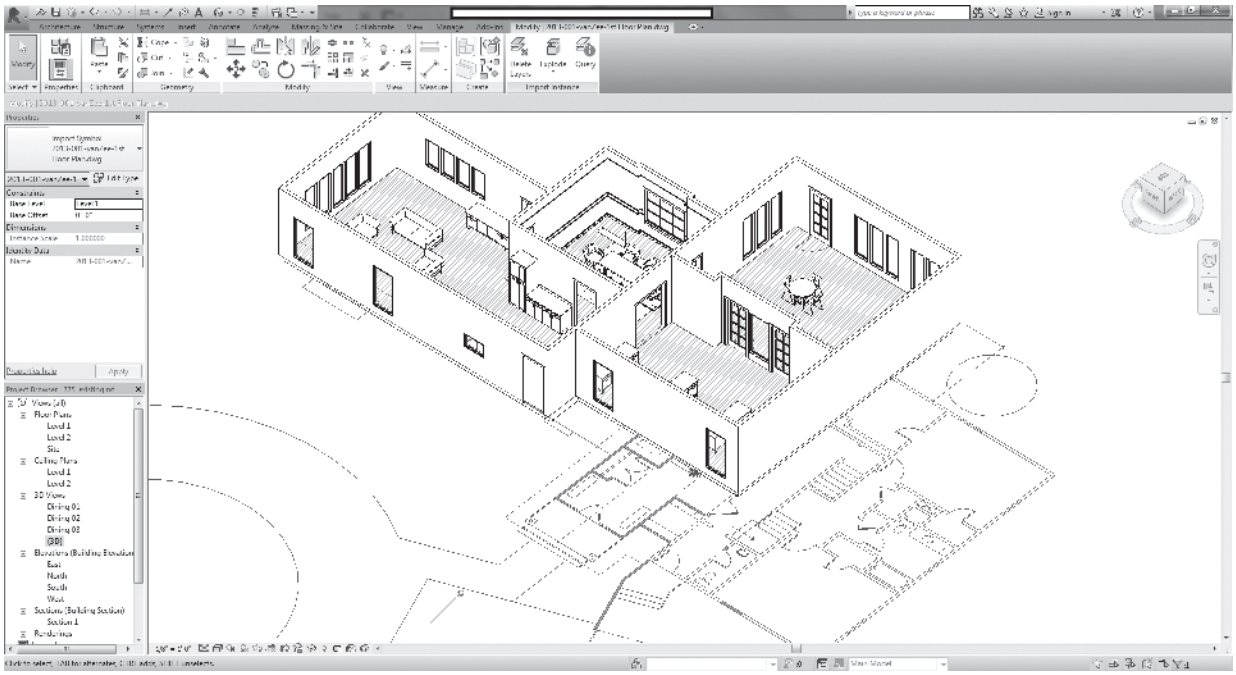

FIGURE 1.15. This student example shows the development of an addition to a plan of an existing residence. Courtesy of Lisa VanZee

(by Bentley). At this point in time, it appears these software programs will not be discarded anytime soon; however, it appears that the architecture and design industry is headed toward a new technology known as Building Information Modeling, or BIM.

Autodesk Revit® Building, a BIM technology, is leading a CAD industry standard for interior design and architectural practice. BIM is not a specific program, but an integrated approach to design and construction drawings. It is an approach that produces database-driven, 3-D parametric models of proposed projects that address geometry, spatial relationships, sectional perspectives, unit-cost impacts, and detailed documentation with unprecedented speed. Once mastered, the technology facilitates the entire multidisciplinary interactions of a project team. Revit is available in three different formats: Revit® Architecture, Revit® Structure, and Revit® MEP (mechanical, electrical, and plumbing). An advantage of Revit (which stands for Revise Instantly) is that revisions made in one view or drawing are automatically integrated into related drawings and/or schedules as illustrated in Figure 1.14. In the AutoCAD platform, this would require the changes made to one drawing be "X-referenced" to the other base drawing.

As many large design firms across the country begin to implement BIM, specifically Autodesk Revit®, into their practices, it will be essential to educate design students in this technology (Figure 1.15).