

# CHAPTER 3

## Design Theory: Aesthetics, Elements, and Principles of Design

**D**esign—whether for interiors, graphics, fine arts, textiles, or industrial products, to name just a few applications—has several key features. Among them are an intended purpose, original idea, skillful planning of the arrangement of parts, and a culmination in a complete artistic unit. **Design theory** is a way to direct design based on a system of beliefs or philosophy. Theory is the most fundamental beginning of design.<sup>1</sup> This chapter addresses the building blocks that produce good design, that is, design that is successful in meeting its intended artistic and functional goals. In other words, design is intent.

### AESTHETICS

Aesthetics, derived from the Greek, is the branch of philosophy that deals with art, its creation, its forms, and its effects.<sup>2</sup> Alternatively it denotes pleasure in experience. Yet as you will see further in Chapter 11, the Ancient Greek philosopher held that the standard for beauty was objective, determined by mathematical formulas that dictated proportion and harmony. So, if the standards by which we judge beauty are objective and therefore reasonably universal, are those beliefs contradictory to the notion that “beauty is in the eye of the beholder,” as in subjective? How do we factor in taste and style? Does form follow function? This is discussed further in Chapter 12. These questions are perpetually debated by designers and students in all design disciplines.

Aesthetics drives the form, or the *visual aspect*. Interior designers also need to determine whether a design is successful in a particular context, place, and time. The design should serve its intended purpose, that is, the function. Although we all have individual tastes and preferences, depending on our experiences, there is general consensus regarding what is pleasing to the senses and what a positive experience is. Fashions come and go but the essence of what makes for good design remains, sometimes referred to as classic design.

Examining the bones, not merely the skin, of a composition helps a designer determine what is valid or convincing. Although we might not favor the fussy fashion during Queen Victoria's reign (discussed in Chapter 12), an experienced, attuned, and trained eye will be able to discern the good Victorian from the bad, and what lies in between. The universal standards for good design tend to transcend culture, geography, and time, although applied as wonderful variations. Understanding the rules of aesthetics, through knowledge, observation, and research, gives the designer the confidence to break the rules *intentionally*, not by happenstance. Innovators in art and design have an understanding of how the general population will react to their work. For example, the 20th-century artist Pablo Picasso aimed to upset the status quo and generate a variety of responses, even negative ones, to his creations. This came well after he had understood and applied his classical training to his art. Good design is understandable on some level; it has integrity and some sense of completeness.

To create or synthesize a composition, whether it is an interior, a building, a sculpture, or a painting, it is helpful first to analyze. What are the most basic building blocks of the composition? What are the existing components? What problems or solutions do they pose? What may be developed, added, changed, or eliminated? How does a designer group these elements? The purpose of any design is to organize its various parts into an integral whole. How are the components in the composition combined to create harmony? These are some of the questions explored in this chapter.

Design theory is influenced by many factors, such as historical precedent, environmental design

research, and functionalism (discussed in Chapter 2.) Designing may be thought of as using skills learned to match human needs with available technical resources within the practical constraints of business.

## Design Thinking

Design thinking is a term often credited to Tim Brown, CEO of IDEO, the interdisciplinary think tank for problem solving and looking at the big picture. It relies on intuition—ideas that have emotional meaning—and functionality. Design thinking is a collaborative process by which the designer's sensibilities and methods are employed to match people's needs with what is technically feasible and a viable business strategy. In short, design thinking converts need into demand. It's a *human-centered approach* to problem solving that helps people and organizations become more innovative and creative.

"Simply put, design thinking is focused on human beings; it is inspired by what people say and how they behave; and it results in telling the users' stories through the designed object, interior, structure, or place."<sup>3</sup>

Historical precedent provides a valuable contribution to design theory by suggesting how past designs solved problems or represented particular ideals.<sup>4</sup> The design process is holistic and contextual. We are affected by our environment as our environment, in turn, impacts us. Throughout this text, research is noted to validate the relationship between humankind and its environment. Another critical influence on design is the understanding of how perception influences our sense of space or sense of place.

**Gestalt psychology** holds that humans innately perceive things as a whole so that what is perceived is complete and comprehensible. Individual elements must be seen as part of a larger environment.

While all of these terms may seem rather complex as a student progresses in his or her design education and participates in a studio project, they will serve to help to frame a *design concept* for projects.<sup>5</sup>

The design concept will be developed as a conceptual framework from which to apply the theories learned here and will be discussed further in Chapter 5.

## ELEMENTS OF DESIGN

The following are basic building blocks of design that we call **elements**:

- Form
  - Point
  - Line
  - Plane
  - Volume
  - Shape
- Scale
- Color
- Texture
- Pattern
- Light

### Form

The architect David Kent Ballast defines **form** as “the basic shape and configuration of an object or space. It is often the way we first distinguish one thing as being different from another.”<sup>6</sup>

Forms may be composed of **solid**, or *positive*, areas and **void**, or *negative*, areas (hollow spaces). Sculptural objects, whether designed for fine art or the built environment, often play on the use of positive and negative spaces. In some instances, equal importance may be given to solid and void design elements in a single form, such as a piece of furniture or a structure. The interior environment may also be designed to demonstrate the effect of the combination of both positive and negative elements.

It makes sense to backtrack to see how a three-dimensional form is established by looking at line and shape (one- and two-dimensional concepts). Actually, before a line exists as a single dimension, it exists as a point. A point is actually an abstract notion; unless combined with another point, suggesting a beginning and an end, it is not discernible. Seen in relation to each other, two points become a **line**.

A line indicates either length or width. As a line shifts direction, developing both length and width, it defines a **shape**, a two-dimensional unit. The addition of the third dimension, depth or **volume**, produces the boundaries of a solid or of a void.

A line is a one-dimensional unit that gives direction to a space. It may be straight or curvilinear. Straight lines may be horizontal, vertical, or diagonal.

A **horizontal line** is one that is parallel to the plane of the Earth, its horizon. This type of line denotes stability, ever-present nature, rest, and repose—qualities that represent our perception of the Earth’s horizon. The American architect Frank Lloyd Wright (1867–1959) championed the use of horizontal lines in many of his buildings. Fallingwater, a residence he built between 1936 and 1939 for Edgar Kaufmann Sr., near Mill Run, Pennsylvania, exemplifies the strong use of the horizontal plane (Figure 3.1). The feeling created is one of connectedness to the Earth because the structure is grounded in its natural environs.

Interior designers use horizontal lines in many different ways. One of the more common ways is to alter the viewer’s perception of the size of a space. Traditionally, walls may be divided horizontally with the use of a **dado**, or chair rail, that approximates the height of the top of a typical chair (Figure 3.2), or with a picture rail, placed higher, to showcase artwork. This division alters the viewer’s perception of the room because the viewer tends to focus on the lower portion of the room, closest to eye level. This change in focus creates a feeling that the space is smaller and, therefore, more cozy and personal.

**Vertical lines** are perpendicular (at a right angle) to the horizon. They denote resistance to the force of



**Figure 3.1**

Fallingwater, a residence in Pennsylvania designed by American architect Frank Lloyd Wright in 1937, demonstrates the tranquility provided by use of the horizontal plane. (Archive Photos/Getty Images)



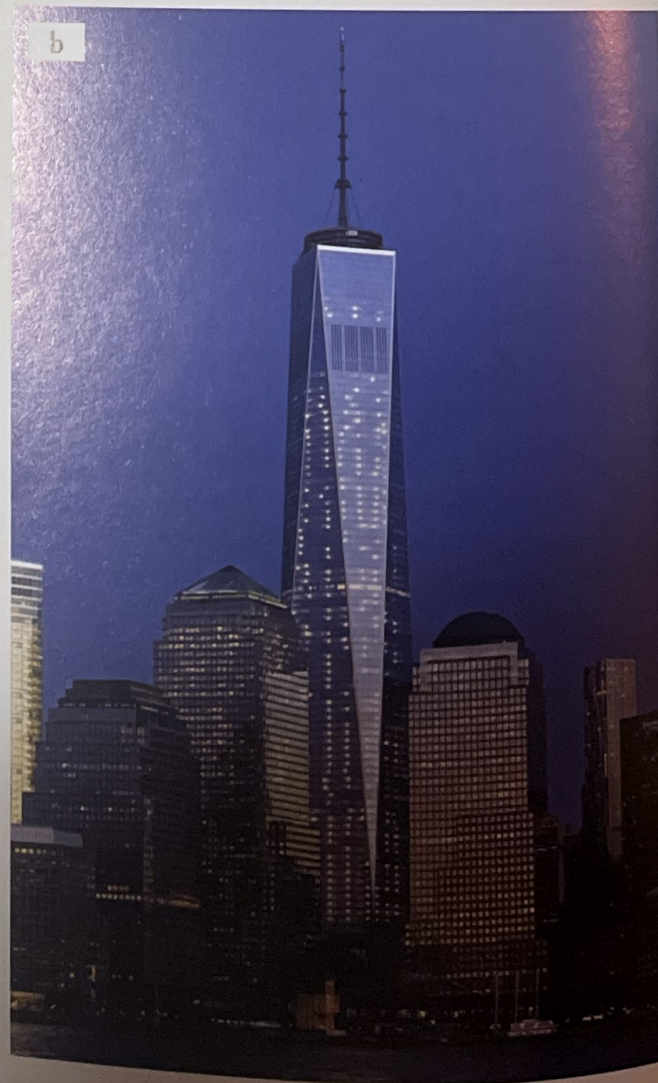
**Figure 3.2**  
Formal reception area in Government House. (Brent Winebrenner/  
Lonely Planet Images/Getty Images)

gravity. A skyscraper exemplifies the effect of the vertical line in its strength and upward movement.

Burj Khalifa, in Dubai, United Arab Emirates, boasts the title of tallest tower in the world, at a staggering height of one-half mile (Figure 3.3 a).

Freedom Tower, One World Trade Center, New York City, on the site of the original Twin Towers destroyed by terrorist attacks on 9/11 (September 11, 2001), is an assertive symbol of strength, resiliency, and optimism, while remembering the tragedy of the former monuments resulting in the loss of 3000 lives (Figure 3.3 b).

A **diagonal line** is one that is at an angle. It denotes a more pronounced dynamic motion than a horizontal or a vertical line. A diagonal line may create tension. If not used carefully in a space, or if



**Figure 3.3 a and b**  
a. Burj Khalifa, Dubai, UAE; b. Freedom Tower. (a: Dmitry Erokhin/Alamy; b: Siegfried Layda/Getty Images)



Figure 3.4 Daniel Libeskind utilizes a series of sharp angles in the Denver Art Museum. (© Prisma Bildagentur AG/Alamy Stock Photo)



Figure 3.5 Solomon R. Guggenheim Museum, New York City, completed in 1959. Designed by Frank Lloyd Wright in the latter part of his career, the organic circular structure is an evolution from previous styles that were more linear. (STAN HONDA/AFP/Getty Images)

overused, the sharp angle of a diagonal line can produce a feeling of instability and threat. The architect Daniel Libeskind favors this line, using it in many of his projects, as seen in his installation for the Denver Art Museum (Figure 3.4).

A **curvilinear line** is a bent line—one that deviates without a sharp angle. In contrast to straight lines, which may be thought of as representing the male human body, curvilinear lines evoke the gentler and softer outlines of the female body. Another way to envision the different sensations that are evoked is that straight lines, particularly those that are vertical or diagonal, suggest a direction or force that moves outwardly or externally, whereas an attribute of the curvilinear line is a more inward or enveloping direction. The spiral structure of the Guggenheim Museum, in New York City, demonstrates a shift for Wright two decades after Fallingwater (Figure 3.5).

A **plane** is a flat surface, a form with the two dimensions of length and width. Planar surfaces, for the interior designer, generally consist of ceilings, walls, floors, and furniture surfaces.

Often when we speak of volume, the three-dimensional aspect of an object or the architectural

aspects of a space, we are speaking of mass. The examples of solid and void, use of negative and positive space, and the different experiences they evoke relate to volume and mass (Figure 3.6).

Shape is a two-dimensional unit that describes the contours of lines. Two broad categories of shape are geometric and organic. **Geometric shapes**, whether straight or curvilinear, are regular. Examples include the square, rectangle, triangle, and circle. With knowledge of one dimension, a mathematical formula can be used to calculate other dimensions. For instance, if you know the diameter of a circle, and the appropriate formula, you can calculate its circumference.

Considered an introverted shape, the circle is often associated symbolically with a feminine sensibility, in contrast to shapes composed of straight lines, which are thought of as having a more masculine identity. The square, with its equilateral sides (lines of the same dimension), denotes regularity and tranquility. The rectangle, with less equality between length and height, is the most commonly used shape in interior architecture. The triangle's dynamic use of three lines has been associated with energetic stability.

**Organic shapes** are based on nature and living objects, whether in the animal (and human) or plant kingdom. One type sometimes used by designers may be described as amorphous or amorphic, that is, without a definitive shape. Yet another type of organic shape is *botanical*, representing the plant world, including vines, leaves, flowers, and fruits. Sometimes the term *vegetal* is used, especially in referring to fabric prints and patterns.

As straight and curved lines move in more than one dimension, they take shape, forming the square, rectangle, triangle, and circle. As they take on the third dimension of depth, they are called forms. Often a combination of straight and curvilinear forms makes for a satisfactory arrangement.

Organic shapes may be naturalistic (that is, realistic), stylized (meaning representational, denoting the basic or essential components of the shape of an object), or abstract (nonrepresentational, in that they are not easily recognizable as given objects in the real world) (Figure 3.7).



**Figure 3.6**

An intriguing yet relaxing use of solid and void in this children's space. (Design © Rosan Bosch Ltd., photographer, Anders Sune Berg)



**Figure 3.7**

Menorahmorph by Karim Rashid. (Julia Ewan/The Washington Post/Getty Images)

## Scale

The size of an object can be measured by the length, width, and depth of its surfaces. When comparing the relative size of two or more objects, we speak of **scale**. Scale is the relative size of one thing as it relates to another of known size. Often, we speak of comparing something to the **human scale**. Despite idiosyncratic differences among people, there is consensus about a recognizable, constant range of what we expect human size to be. A high-pitched ceiling, known as a *cathedral ceiling*, evokes a sense of grandeur that is

not on a human scale. Artists find the juxtaposition of various scales an intriguing metaphor, as demonstrated by the Crown Fountain, a contemporary art installation in Chicago (Figure 3.8). Alternatively, we may describe an interior that uses a low ceiling plane as conveying a feeling of comfort for humans occupying that space. The scale of furnishings, doorways, and windows may also be used to alter a viewer's perception of a space. A designer's strategic use of scale in the architectural elements and interior details may evoke different sensations, ranging from intimate to impersonal.

## Color

Considered by many to be the most recognizable design element, color is a powerful tool that projects a space's personality. Children generally learn to name colors before they can identify shapes. Chapter 4 further discusses the meaning of color to the interior



Figure 3.8  
Public art installation. (Courtesy of the author)

designer in terms of its physical properties, its cultural symbolism, psychological and perceptual significance, its effects on other components of a space, and color schemes.

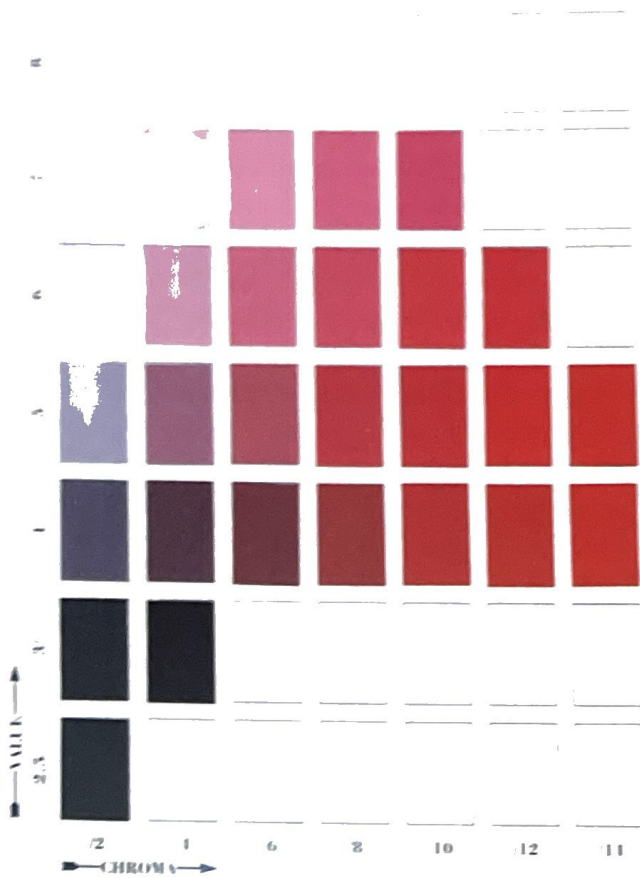
Without light, there is no color. The science of physics deals with color as a physical property of light. Each color is differentiated from the others by its wavelength. When light passes through a glass prism, it refracts, or breaks, into wavelengths. The spectrum of light that humans are able to see is known as the **visible spectrum**. It ranges from red to violet (or purple). Red has the longest wavelength, violet the shortest. Red is the warmest color, violet the coolest. In between are orange, yellow, green, blue, and indigo, a blue-violet. White light is composed of the three **primaries of light**: red, green, and blue.

When we speak of color as *substance*, we are referring to pigmentation, such as dyes (natural and synthetic) and paints. The three **primaries of color** as pigment are red, yellow, and blue. When these primary colors are mixed together, the result is black.

There are many commercial ways to name colors, but a more scientific and universal language of color is based on three distinct attributes: hue, value, and chroma (Figure 3.9).

- **Hue** is the family of a color, or the way we distinguish one color, such as red, from another, such as yellow. In everyday conversation, people use the words *color* and *hue* interchangeably, but hue is a more precise term for a color's family.
- **Value** is the degree of lightness or darkness of a color. When white is added to a hue, the value is heightened, creating a **tint**. Conversely, when black is added to a color, the value is lowered, creating a **shade**.
- **Chroma** is the purity, saturation, or intensity of a color. Adding gray to a color lowers its chroma. This type of color is also called a **tone**, a muted version of a hue. (Other ways of changing chroma are discussed in Chapter 4.)

If you were limited as an artist or designer to only a few jars of paints, you could attain a virtually infinite combination of colors with red, blue, yellow, white, and black.



**Figure 3.9**  
Color's three attributes: Munsell's theory describes hue, the family of color; value, the lightness or darkness of color; and chroma, the brightness of color. (*Fairchild Books*)

## Texture

The features of a surface, both its construction and its finish, are its **texture**. Texture is a sensory experience that may be tactile, meaning that it can be felt by touch, in addition to being visual.

Certain visual textures merely appear to possess a three-dimensional structure that could be felt. For example, with a simple faux (meaning fake) painting technique called sponging, colors are layered so that the surface appears to have a structural texture. Although the sponged surface is flat to the touch, visual interest is enhanced by this illusion of tactile texture, as if it had depth (Figure 3.10). **Trompe l'oeil** is another artistic technique that tricks the eye, causing the viewer to imagine a structure having significant three-dimensionality rather than being flat.

Texture becomes even more significant when the colors used in a space are muted or uniform. In these

instances, a variety in textures serves to prevent monotony. A mix of coarse and smooth, large- and small-scale textures maintains greater visual interest than surfaces that have uniform textures (Figure 3.11).

Light plays a significant role in how texture is perceived. Shiny surfaces, such as a highly polished metal, reflect light. Matte surfaces, such as cork, absorb light. Paint sheens, for example, vary from highly reflective, or gloss, to flat, or matte. The glossier the sheen level selected, the more visible imperfections will appear. The angle of light across a surface projects shadows



**Figure 3.10**  
Tactile textures, such as those found in nature, may be enhanced by age or simulated with faux painted techniques, such as Venetian plaster. (*Decorfin*)



**Figure 3.11**  
Beige with texture. (*Barbara Barry Chalet collection vignette at Kravet showroom, New York Design center, New York City. Courtesy of author*)

that change the way texture is seen and may even create unwanted effects.

Distance also affects the way we perceive texture. As with pattern, for texture to be perceived from a distance, the detail must be of sufficient size for the dimensional quality of the surface to be discerned. When designers are selecting finishes, the samples they evaluate need to be large enough, and viewed at varying distances and under varying lighting conditions, to enable a determination of how they will actually present themselves in the space.

### Pattern

The repetition of a specific motif is known as **pattern**. A **motif** may be thought of as a shape, theme, or figure. The individual motif of a pattern is discernible as a distinct entity, whereas texture appears as an overall tone.

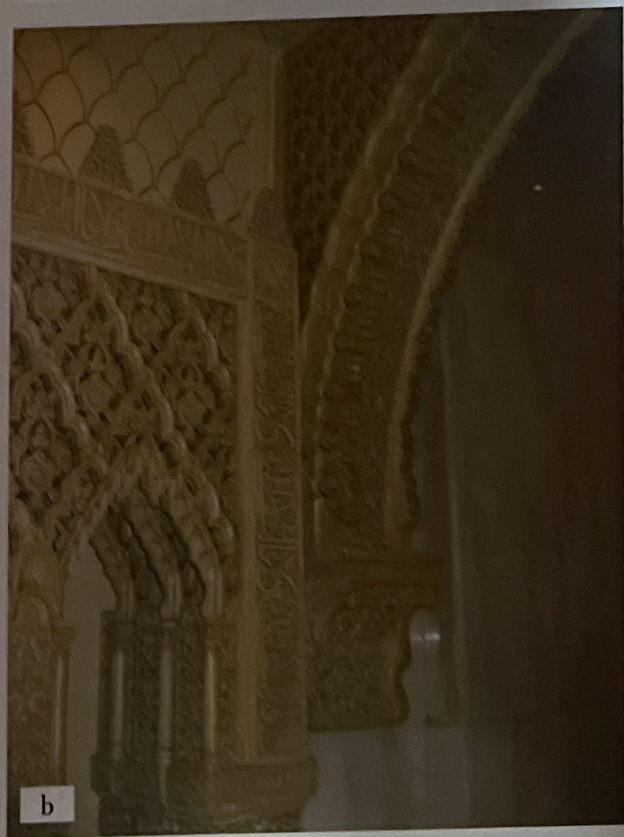
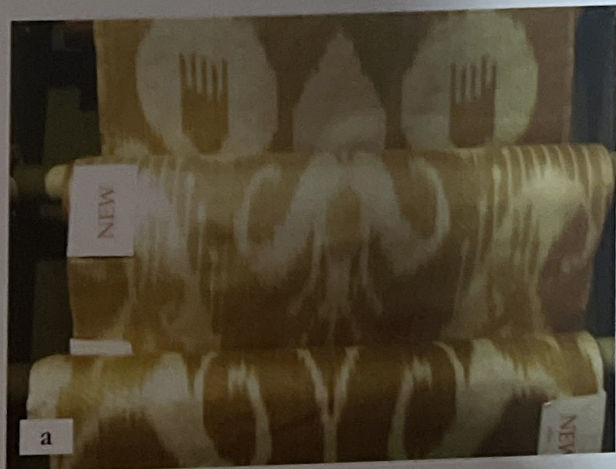
Patterns may be either **applied** or **structural**. An example of an applied pattern is the design repeated by printing a fabric. A design achieved in a fabric through weaving is a structural pattern. A similar pattern is featured in Figure 3.12 b in both applied and structural variations (Figures 3.12 a and b).

Designers use pattern to enhance visual interest and project distinct moods. Motifs, like shapes, may be geometric or organic and expressed in naturalistic, stylized, or abstract ways. Within each of these categories are innumerable motifs identified by specific, commonly accepted traits. For example, geometric patterns common to surface materials, such as fabric and carpet, include stripes, a series of horizontal or straight lines; checks, a series of repeated squares; or plaids, a less regular arrangement of boxes and rectangles. Diagonal lines form various patterns, such as the chevron and flame stitch. A common pattern based on the circle is the polka dot.

Some of the earliest patterns are based on representations of nature. These types of designs have appeared in the works of cultures around the world, from ancient times to the present, and are universally popular. They may express the natural as well as supernatural world, through geometric or organic designs that are representational, stylized, or abstract.

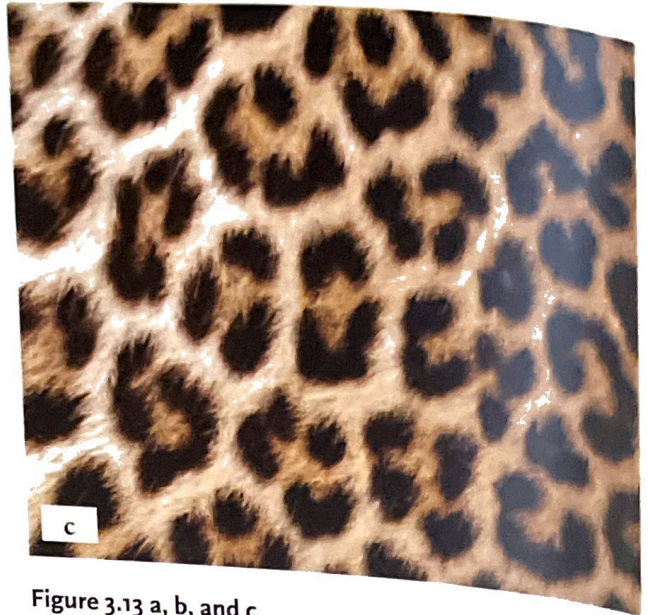
Organic motifs (Figure 3.13 a) include botanical or vegetal images, such as plants, leaves, and flowers, whereas figural motifs feature humans or animals.

For example, paisley (discussed further in Chapter 11), is a stylized botanical motif originating in India derived from a reference to a vegetal form, the mango. French-inspired toile, also discussed in Chapter 11, is an example of a figural pattern that depicts a pastoral scene of people, animals, and/or plants (Figure 3.13 b). Common zoomorphic prints are representative of the



**Figure 3.12 a and b**

a: A similar pattern is applied in a., the fabric print, as it is in b; b: Typical Islamic architecture, featured here in Barcelona, Spain. (a and b: Courtesy of the author)

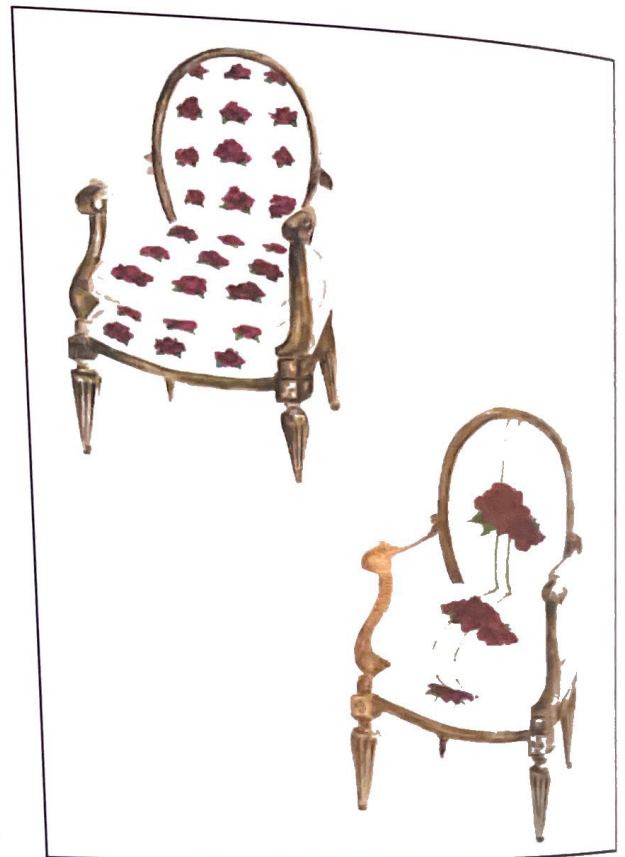


**Figure 3.13 a, b, and c**  
 a: Paisley print fabric; b: Toile print fabric; and c: Animal print fabric. (a: Courtesy of the author; b: WWD/Conde Nast; c: PhilipCackaliStock)

markings of the hides of exotic animals, such as the leopard (Figure 3.13 c).

A pattern may also be described in terms of its scale (Figure 3.14). It is important for designers to keep in mind that when the individual components of a pattern are very small in scale, or viewed at a distance, the pattern will appear as a texture.

Patterns and combinations of patterns in both residential and contract interior design can produce a variety of physiological and emotional responses, reflecting their symbolic and cultural meanings.<sup>7</sup> People perceive patterns differently, depending on their demographic characteristics (including gender, regional, and age differences) and personal and cultural experiences. Pattern is significantly influenced by the setting in which it is applied. The extent to which mixed patterns are perceived as pleasing is also a matter of cultural preference and personal taste.



**Figure 3.14**  
 The same floral patterns used to upholster the same chair demonstrate significantly different scale. (Photos of artist sketches by Jennifer Angulo provided by author from her collection)

## Light

As already noted in this chapter, without light there would be no visible form, color, or texture. Comprehending the power of light gives a designer an enormous repertoire of ways to influence a space. Chapter 7 discusses the effects of light and lighting systems in greater detail.

Any discussion of light as a design element includes both quantitative and qualitative descriptions. People perceive light in terms of the level of illumination, or brightness, as well as its comfort and relation to a sense of well-being. Lighting design combines science and art. As with other areas of knowledge that depend heavily on advances in technology, lighting design is a specialty requiring ongoing learning. Consider how information about computer technology becomes outdated on a continuous basis. A lesson to learn is to appreciate the complexities of lighting design and know when to call upon expert collaboration.

Three different layers of lighting—ambient, task, and accent—are used to achieve the following varied purposes:

- **Ambient** (meaning “to go around”) lighting is diffuse, uniform illumination that provides for safe movement. It is also referred to as *general lighting*.
- **Task lighting** illuminates certain areas of a space to facilitate specific activities, such as reading. It can serve to define functional areas of a room, such as the entertainment area of a hotel guest room. It is also referred to as *local lighting*.
- **Accent lighting**, or **key lighting**, creates an emphasis or focus, such as to highlight a painting or a sculpture.

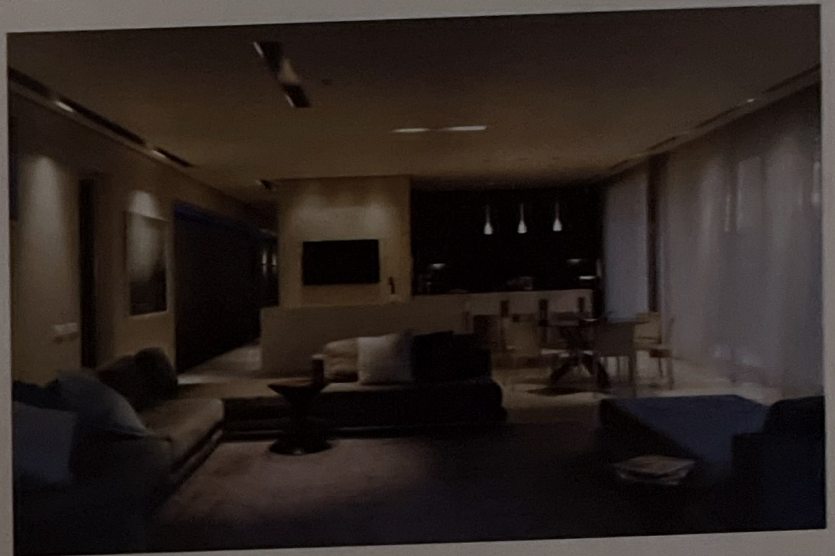
By using more than one layer to illuminate a space, the interior designer can add interest and versatility while fulfilling basic lighting needs. See *FYI . . . Purposes of Light*. This applies to both residential and contract design (Figure 3.15).

The two basic categories of light are natural and electric. **Natural light** includes daylight, flame, candle, and skylight. **Electric or artificial light** includes incandescent, fluorescent, neon, high-intensity discharge, LED (light-emitting diode), and OLED (organic

### FYI . . . Purposes of Light

Light serves many purposes, among them the following:

- Provide visibility for mobility and activity
- Convey a mood or feeling appropriate to a space
- Create drama through shadows and contrast
- Highlight or camouflage structural features of a space
- Enhance or diminish the effects of color
- Emphasize or reduce surface features, such as texture



**Figure 3.15**

The three layers of light: ambient, task, and accent. (caia image/Alamy Stock Photo)

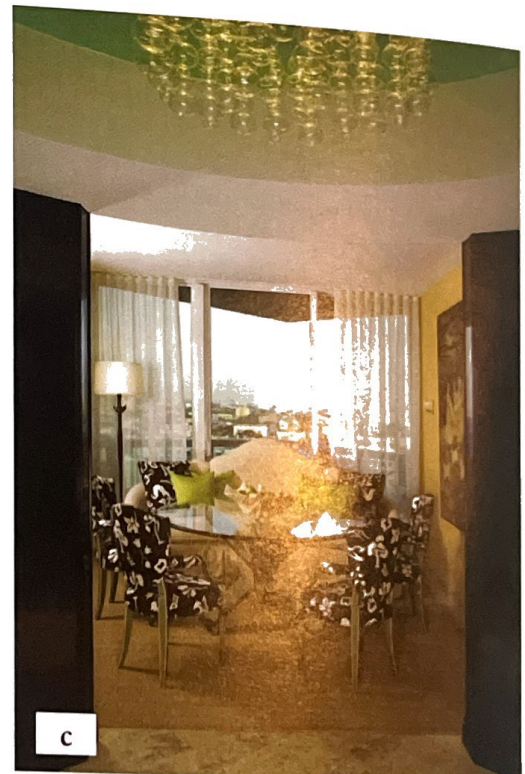
light-emitting diode). Chapter 7 further explores shapes of light, distribution of light, types of lamps (bulbs) and their housing, luminaires (fixtures), temperatures and colors of light, and the application of light for residential and contract spaces.

## PRINCIPLES OF DESIGN

The second most fundamental way to analyze a design composition is to consider how the principles of design are applied. Design principles are thought of as more complex than elements. Whereas elements are singular components of a design composition, **principles of design** are the rules or guidelines that govern the use of these elements within the composition. Thus, the aspects previously identified as elements may be thought of as components of the principles.

The discussion that follows focuses on six design principles:

- Balance
- Harmony and unity
- Rhythm
- Emphasis and focus
- Contrast and variety
- Proportion



### Balance

Balance is the state of equilibrium. In design, balance is the arrangement of parts in a composition to achieve visual equilibrium or equality. Equality in design is achieved when features have the same **visual weight**. It is not necessary for the components on either side of a room actually to weigh the same.

The visual weight of objects may be influenced by their size, shape, texture, color, complexity, placement, or position. The arrangement around a real or imagined *centerline*, the *axis*, will define the degree of balance. To have balance, the elements must have equality in effect, force, or importance. And that can be accomplished in a variety of ways.

A typical axis is the vertical line from ceiling to floor through the midsection of a room. A less often utilized, but still significant, axis is the horizontal line at the midpoint of a room that separates the top half of the room from the bottom half. A design that

**Figure 3.16 a, b, and c**

a: This museum displays the formal mirror-image approach of symmetrical balance, in which elements are identical on either side of the vertical axis; b: A living room interior by Drew McGukin demonstrated skilled use of visual weight to achieve asymmetrical balance; c: Radial balance is applied in the dining room by designer Paula Grace. (a: *Courtesy of the author*; b: *Courtesy of Drew McGukin*; photograph by Brett Beyer; c: *Photoshot/Red Cover/Ken Hayden*)

considers both axes gives a more complex balance to a space.

Three types of balance may be used in design: symmetrical, asymmetrical, and radial (Figure 3.16 a–c). **Symmetrical balance** is a formal, static, and traditional type of balance achieved through the arrangement of identical elements around a common axis. This is also known as a *mirror image*. With symmetrical balance, both the designer and the client need to recognize that a change in one item will necessitate a change in its identical counterpart on the other side of the axis.

**Asymmetrical balance** is defined as the achievement of equilibrium through equal visual weight of nonidentical elements around an axis. The result is a composition that is flexible, dynamic, and informal. Although asymmetrical balance may be more difficult to achieve than symmetrical balance, its advantage is that it is a more fluid approach to design. Conditions that create greater visual weight include large size, highly textured or detailed objects, complex or unusual shapes, and dark elements.

Asymmetrical balance should not be confused with a lack of balance, in which elements of the composition do not demonstrate equal visual weight. Lack of balance may be perceived as disconcerting and unstable.

**Radial balance** is an equilibrium that relies on a center point, which serves as the axis around which elements of equal visual weight are arranged. Although less commonly employed than either symmetrical or asymmetrical balance, radial balance is often used for ceremonial spaces.

### Harmony and Unity

“Harmony results in a composition in which all the pieces seem to belong together and work to reinforce the overall design theme.”<sup>8</sup>

Harmony is the combination of various parts into a pleasing and satisfying whole.

The components of a harmonious composition are considered congruous; they belong together. Any feature removed or changed will affect the totality or the integrity of the composition. Harmony exists in the difficult to attain, delicate balance between unity and oneness on the one hand and contrast and variety on the other. One might say the whole is greater than the sum of its parts, similar to Gestalt theory, mentioned earlier. Perhaps the designer Tony Chi references this

elusive quality in what he terms *invisible design*, “what touches you rather than what you see.”<sup>9</sup>

Achieving unity relies on establishing unifying threads or common characteristics. This may be achieved in a variety of ways. There may be a similarity of shape throughout the space, such as the repetition of circular forms. There may be harmony in the application of a unified color scheme (Figure 3.17 a) or a neutral color scheme (Figure 3.17 b) discussed further in Chapter 4. Or, a particular motif or pattern, such as a floral theme, may be interspersed throughout the space to create a harmonious feeling. Harmony may be quiet and soothing, or it may excite, challenge, and foster change.



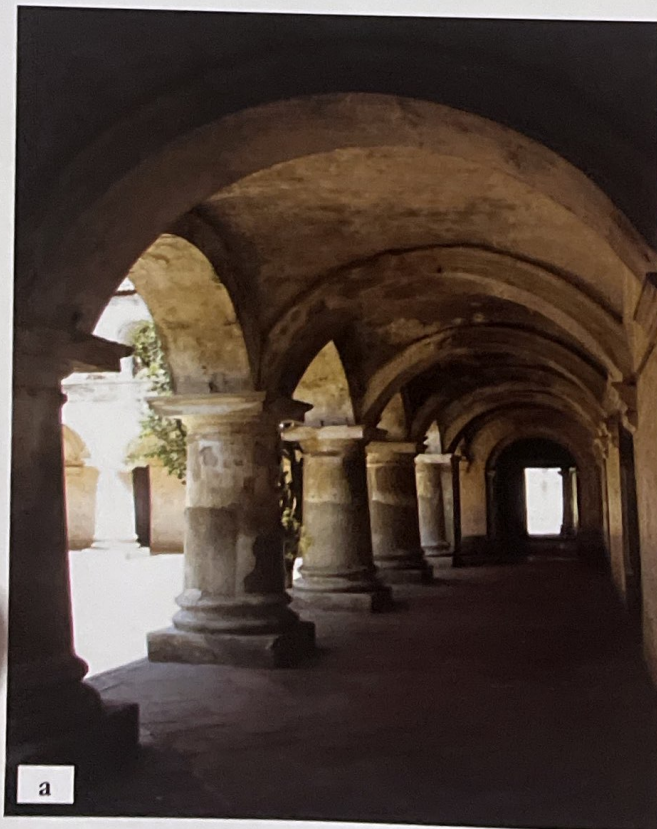
**Figure 3.17 a and b**

a: A refined harmony in this interior demonstrates a subtle variety of traditional and modern elements with unified colors and balanced visual weight; b: Refined harmony in neutrals. (a: Martin Harvey/Corbis/Getty Images; b: Courtesy of Drew McGugin; photograph by Brett Beyer)

## Rhythm

Rhythm is characterized by a recurrence of successive elements in a periodic pattern of repetition. As with musical notes, the spacing may be regular or irregular. The intervals between notes in a waltz, which is regular, may be contrasted to those in a jazz interpretation, with its stops and starts, representing less regularly spaced intervals. The cadence of the waltz is more orderly and stable than that of the jazz piece, although the rhythm of the jazz piece may be more exciting with certain notes providing emphasis with less gradation between notes.

Rhythm in design may be created through the use of linear components, such as a series of architectural columns or windows. Other rhythmic elements can be achieved through the use of colors or shapes positioned thoughtfully around a space or in sequence. A progression of lighting or dispersion of a pattern throughout a space may also provide a rhythmic sensation. It is important to recognize that repetition alone does not convey rhythm. The concept of movement as one perceptually travels through the design is essential, as seen in Figure 3.18 a and b.



## Emphasis and Focus

When a designer employs the principle of emphasis, the result is a composition in which one feature demands attention. That feature is also known as a **focus**, or **focal point**. The concept of emphasis requires that something hold a dominant status compared with other components in the space, which are then considered subordinate.

Dominance, or importance, may be assigned by virtue of any of a number of factors. A feature may command attention because of its large size in relation to the space or other objects within the space. Or, a focal point may be established by the interest of detailing, texture, architectural or historical factors, color, and so on (Figure 3.19). The tools available to a designer to create a focal point are numerous. However, using too many focal points in a space may become distracting and may defeat the purpose of the design. Conversely, a composition with no focus may be perceived as monotonous and bland.

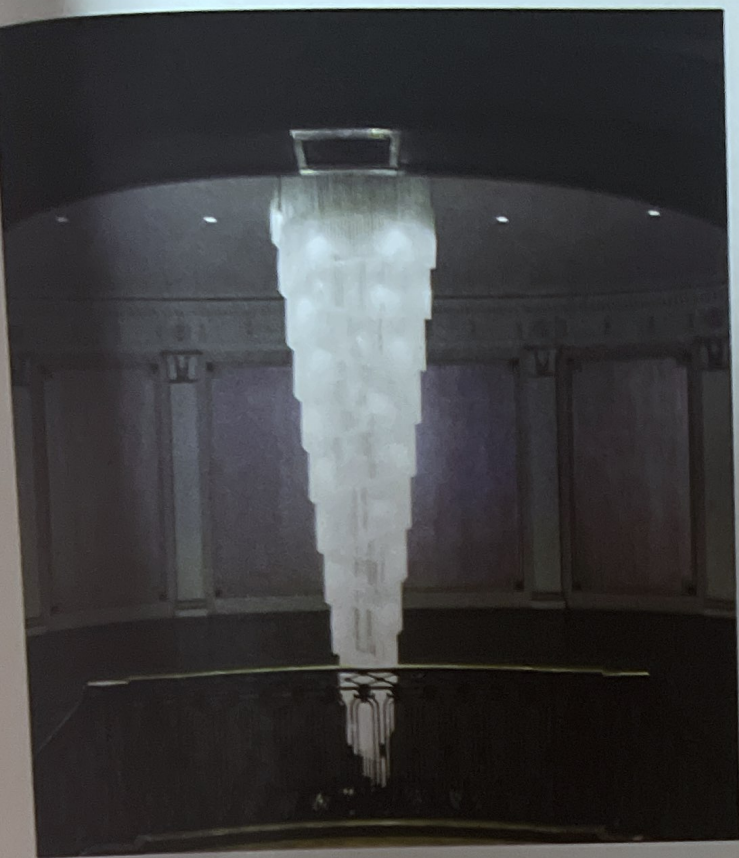
## Contrast and Variety

Contrast is the way we perceive the differences between things. Although sameness, or unity, is an



Figure 3.18 a and b

a: Rhythm in architectural elements is seen in this colonnade of columns and arches; b. Rhythm through color. (a and b: Courtesy of the author)



**Figure 3.19**  
Dale Chihuly's glass sculptures demand and attract attention as a focal point. (Courtesy of the author)



**Figure 3.20**  
Contrast is achieved through lightness and darkness, straight lines, and curves. Here a metal sculpture by Pablo Picasso is silhouetted in the Chicago Institute New Wing through the contrast against filtered light. (Courtesy of the author)

important desire in human nature, contrast is equally important. People thrive on variety, change, even opposition, but to varying degrees and under different circumstances. Any two or more features placed in opposition may achieve contrast. It may be expressed in the difference between light and dark, curvilinear and straight, near and far, old and new, smooth and rough, plain and ornate, small and large, and so on (Figure 3.20). The differences may be striking or subtle. As with any other element or principle, there is no magic formula for how much is warranted for a particular client or application. For some people and in certain situations, a high degree of contrast may induce tension or stimulation overload (Figure 3.21). For others, or under different circumstances, the same degree of contrast may be experienced as a pleasing level of stimulation or arousal.



**Figure 3.21**  
The degree of contrast may be subtle or dramatic, or even perceived as chaotic. (Courtesy of the author)

## Proportion

In contrast to scale, which describes the relative size of an object to one or more objects *outside* itself, proportion is concerned with the relationships of parts *within* a whole. In other words, scale involves external relationships, and proportion involves internal relationships. Proportion may encompass the relationship of parts to a whole object, or the relationship of parts to other parts within a composition that is seen as a whole entity.

This concept is not limited to the study of interior design. In our day-to-day lives, we use proportion in a variety of situations. For example, in describing a woman as short, we compare her overall stature with a known size, perhaps an average height for an adult woman of 5 feet, 5 inches. This is an example of scale, that is, a comparison of something with an external object. Alternatively, a description of a man as stocky denotes proportion: an internal comparison of parts and of width in comparison to height (his width is wider than expected in comparison to his height). Similarly, squat and elongated denote proportion; they address the ratio of certain dimensions (in this case,

width and length) within the whole, compared with each other and with our expectations for that particular form.

Another everyday example that can help explain this principle is a cooking recipe. One person's apple pie might be sweeter than another's because the ratio of sugar to the other ingredients in the recipe is greater in the former than in the latter. It is not the absolute quantity of sugar that makes for the sweeter taste, but its quantity relative to the amounts of each of the other ingredients and the total ingredients of the whole.

Much of our perception of proportionate or disproportionate relationships occurs instinctively. In fact, we are more likely to perceive "out of proportion" than we are to perceive "in proportion," which we consider the given, or expected. In examining the terms *well-proportioned* and *ill-proportioned*, the architect Arrol Gellner concludes that sometimes we just need to let our rational minds step back and let our instincts tell us what looks right.<sup>10</sup> Nonetheless, over the years numerous mathematical formulations have been devised as a means of understanding and quantifying these ratios.

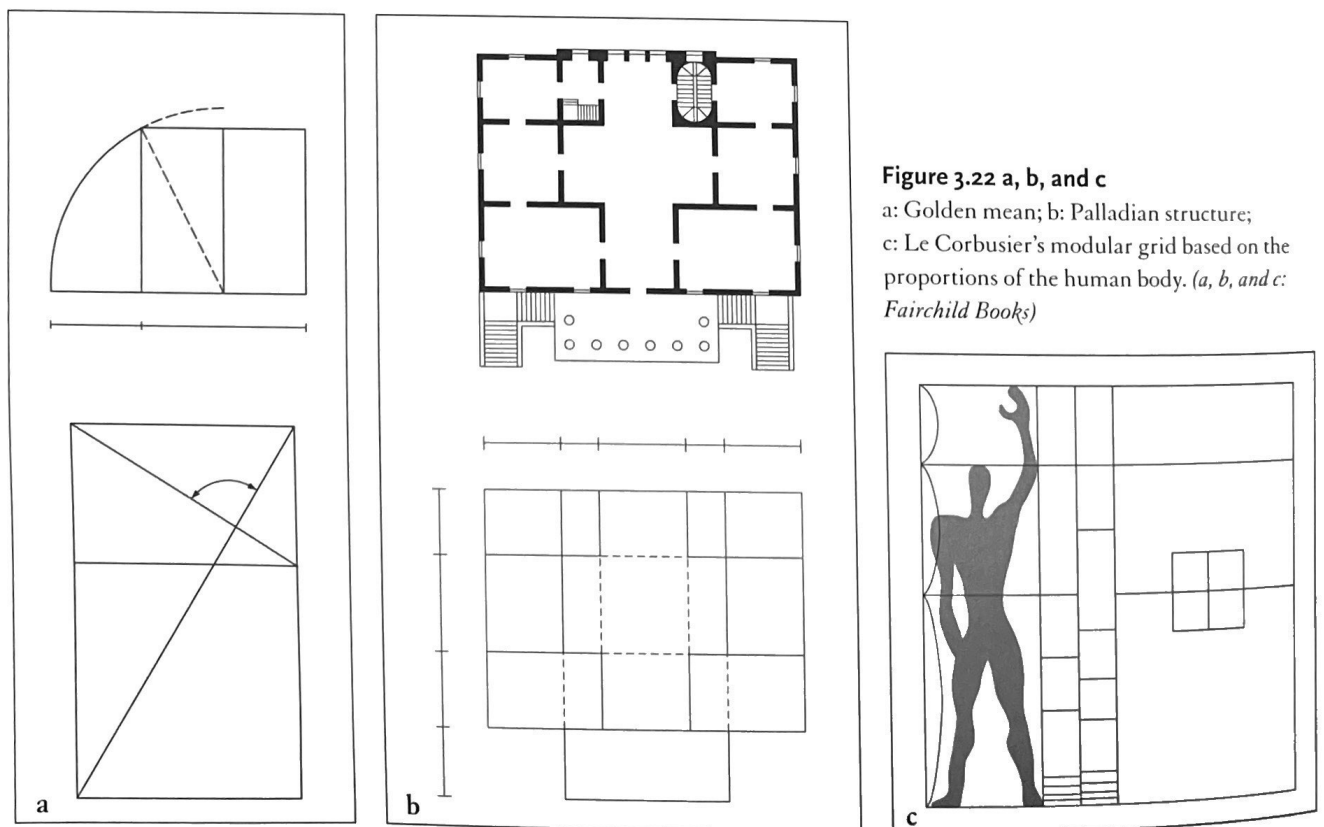


Figure 3.22 a, b, and c

a: Golden mean; b: Palladian structure;  
c: Le Corbusier's modular grid based on the  
proportions of the human body. (a, b, and c:  
Fairchild Books)

One such formula, known as the **golden section**, or **golden mean**, was utilized by the ancient Greeks. It was thought to approximate the best proportions, producing the most universally appealing relationship among parts. Figure 3.22 a illustrates the formula believed to produce a rectangle that has the most pleasing proportions.

This geometric approach was used by the ancient Romans and later by Renaissance architects. The architect Andrea Palladio's *Four Books of Architecture*, published in 1570, describes this sense of proportion (Figure 3.22 b).

In the 13th century, Fibonacci, an Italian mathematician, devised another mathematical way of describing proper proportions. His numerical calculation is presented as a series of consecutive numbers. Each number is the sum of the two preceding numbers: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, and so on. In other words, 3 is to 5 as 5 is to 8.

Consider the proportions we are accustomed to. Most rooms are rectangular, for instance, 8 feet by 13

feet, or 13 feet by 21 feet. Standard sizes of carpets come close to the 5-by-8-foot proportion that can be derived from Fibonacci's calculation. Pictures and picture frames also use similar proportions, such as 5 inches by 7 inches and 8 inches by 10 inches.

In the 20th century, the Swiss architect and designer Le Corbusier used a formula for proportion that relied on the examination of human dimensions (Figure 3.22 c).

Knowing these expectations, designers may wish to play with proportions to create the unexpected. Exaggerated proportions may provide drama and focus to interior spaces (Figure 3.23).

Another approach for modern interiors is to apply more classical rules of proportion as they are more expected and therefore more readily considered acceptable.



Figure 3.23

This sofa is unexpectedly quite wide in comparison to its other dimensions as if it were stretched out. (Gina Fenanzi/LA Times via Getty Images)

## Summary

Although good design is expected to be aesthetic, it needs to serve a purpose, such as functionality and comfort for the user. This is the balance between form and function. There are many influences on design theory, including historical precedent and environmental and technological considerations. Design considerations are best made within a holistic and contextual framework combining emotional, creative, ethical, and rational processes.

The most basic of the building blocks of design are called elements. They are form, scale, color, texture, pattern, and light. Form that is three-dimensional is derived first from a point, next from a line that is one-dimensional, and then from a shape that is two-dimensional. Scale is the relative size of one object compared with an external object of known size. Designers often rely on comparisons with human dimensions when demonstrating scale. The human eye can perceive a wide range of color, known as the visible spectrum, from red, the warmest hue, to violet, the coolest. Color conveys feelings and mood.

Texture may be visual or tactile, or both. Texture is a tool that interior designers use to create interest, especially when the color scheme is muted. A pattern made up of very small-scale motifs takes on the appearance of a texture. Patterns, either structural or applied, are a repetition of a motif. Motifs are often based on features in the natural world and may be imbued with much symbolism and feeling. Patterns are described as being either geometric or organic and are expressed in naturalistic, stylized, or abstract ways.

Without light, there would be no visible form, color, or texture. Lighting, a powerful tool for the

designer, serves many purposes, among them providing visibility and establishing a mood. Lighting solutions, whether natural or electric, may rely on one or a combination of the following layers: ambient, task, and accent lighting.

Principles of design include balance, harmony and unity, rhythm, emphasis and focus, contrast and variety, and proportion.

Balance, or a state of equilibrium, is achieved through a system of visual weight. This can be accomplished symmetrically, asymmetrically, or in a radial way around an axis point.

A composition is considered to be successful, good, and whole if it has achieved harmony. Harmony presumes a pleasing balance between unity and variety.

The repetition of features, like the notes of a musical composition, produces a rhythm that takes the eye through a space. Juxtaposing features with contrasting importance creates emphasis or a focal point. Factors affecting the degree of importance a feature holds may be its size, intricacy, lighting, color, or location, among others. Differences create contrast, a vital part of an interesting composition. Designers may contrast a variety of elements, such as shapes, colors, scale, or pattern.

Although many mathematical formulas, such as the golden section, or golden mean, can be used to judge proportion, it is often perceived instinctively, based on our experiences. Whereas scale speaks to external relationships, proportion deals with internal relationships: the comparison of parts within a whole to one another or to the whole.