CHAPTER 12

Using the Principles of Design

Objectives

After studying this chapter, you will be able to

- determine how proportion and scale are related to objects.
- give examples of formal and informal balance.
- explain how emphasis creates a focal point.
- list the different types of rhythm.
- describe the goals of design.
- give examples of sensory design.

To Know

proportion
golden rectangle
golden mean
golden section
scale
visual weight
balance
formal balance
informal balance
emphasis
rhythm
repetition
gradation
radiation
opposition
transition
harmony
unity
sensory design

CHAPTER 12

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In the previous two chapters, you learned about the elements of design. When the elements of design are applied using the principles of design, you can achieve the goals of design. This chapter will tell you how to use this process to create well-designed rooms.

The Principles of Design

The principles of design are guidelines for working with the elements of design. When you understand the principles of design, you can use the elements of design successfully. The principles of design are proportion and scale, balance, emphasis, and rhythm.

Proportion and Scale

Proportion and scale are closely related but different. They both describe size, shape, and amount. They are both concerned with the relationships of objects and parts of objects.

Proportion

Proportion is the relationship of parts of the same object, or the relationship between different objects in the same group. It is an important consideration when selecting and positioning furniture and accessories in a room. For example, proportion is a consideration when choosing a shade for a lamp. The lamp base and the lampshade need to be in proportion to each other (parts of the same object). Proportion is also a consideration when choosing the surface on which to place the lamp. The lamp and table need to be in proportion to each other (different objects in the same group).

The accessories that surround the lamp are also considered. The accessories must be in proper proportion to both the lamp and the table (different objects in the same group). Proportion can also be described as the ratio of one part to another part or of one part to the whole. Ratios such as 2:3, 3:5, and 5:8 are more effective than ratios of 1:1 or 1:2. For instance, a rectangle has more pleasing proportions than a square. These ratios also apply to rooms, furniture, and accessories. See 12-1.

The Greeks were masters of the use of proportion. They developed guidelines that have been used for centuries. Study 12-2 as you read about the Greek guidelines for developing pleasing proportions:

- The golden rectangle has sides in a ratio of 2:3. The short sides are two-thirds the length of the long sides. One example of the golden rectangle is the Parthenon in Athens. The golden rectangle is frequently found in good design.
You can find many examples of the golden rectangle in houses and their furnishings.

- The golden mean is the division of a line midway between one-half and one-third of its length. This unequal division is more pleasing visually than an equal division or a division at a point that is less than one-third of the line’s length. The golden mean is often applied when planning wall arrangements, tying draperies, and hanging pictures.

- The golden section is the division of a line or form in such a way that the ratio of the smaller section to the larger section is equal to the ratio of the larger section to the whole. This relationship is based on the progression of the numbers 1, 2, 3, 5, 8, 13, 21, and so forth. Notice that the number 3 and each number following is the sum of the two previous numbers. When using the golden section to help you plan, you will find that the ratio of 2:3 is about the same ratio as 3:5 and other similar ratios. Using the concept of the golden section can help you develop more pleasing proportions in your designs.

Most people do not actually measure proportions. They can tell by looking at a rug on a floor if it is in the proper proportion. Likewise, they can tell if a bed or sofa visually “fits” its room. People tend to develop an awareness or sense of proportion based on their own visual perceptions.

Scale

Scale refers to the relative size of an object in relation to other objects. For example, a chair is a small piece of furniture in comparison to a bed. A twin bed is small in comparison to a king-size bed. However, the twin bed is still larger than the chair.

When furnishings are scaled to the space they occupy, they are visually pleasing. For example, large rooms require large-scale furnishings. A king-size bed is appropriate in a large bedroom. However, it might seem too large for a small room. Small rooms require small-scale furniture.

The furnishings within a room should be in scale with one another. For example, a large sofa requires a large coffee table. A small sofa would not go well with a large coffee table.

Furnishings also need to be in scale to the people using them. A large person will feel more comfortable in a chair of substantial size. Likewise, a child will feel more comfortable in a chair that is scaled to his or her size.

Another aspect of scale is visual weight. Visual weight is the perception that an object weighs more or less than it really does. For example, a wooden chair and an upholstered chair may have the same dimensions. However, the upholstered chair will look larger and heavier than the wooden chair.

Thick lines, bold colors, coarse textures, and large patterns add to visual weight.

When decorating a small room, choose furniture that has light visual weight. This will prevent the furniture from making the room look crowded. Likewise, choose accessories that are in scale to the furniture. In a small room, it is wise to “think small” in regard to furniture and accessories.

Balance

Balance implies equilibrium among parts of a design. It is a perception of the way arrangements are seen. When there is balance, there is a sense of equal weight on both sides of a center point. See 12-3. There is not a visual pull in one direction more than the other. Balance can be either formal or informal. Both types of balance can be used in the same room or space.

In formal balance, identical objects are arranged on both sides of a center.
point. Formal balance is also called symmetrical balance. This type of balance is often used in elegant and formal rooms, 12-5. It is especially appropriate for traditional decorating styles. It can also be used in exterior design. Formal balance is easy to achieve and makes people feel comfortable because of its orderliness.

In informal balance, different but equivalent objects are arranged to the sides of a center point. Informal balance is also called asymmetrical balance. Although the sides are not alike, neither side overpowers the other. A feeling of equilibrium is created.

Informal balance can be achieved in various ways. In order to balance a heavy object and a light object, the heavier object must be placed closer to the center line than the light object. Several smaller objects can balance a single, large one. If objects are the same size but of unequal distance from you, the object closest to you will appear larger.

An object that has visual weight can also balance a single, large object. Color, texture, and form all create visual weight, 12-6. Bold, warm colors will appear heavier than subdued, cool colors. Decorations added to an object give it visual weight. Typically, large objects appear heavier than small objects.

Balance is a very important principle to follow when arranging accessories and furnishings. The furnishings on each half of a wall or opposite walls should balance with each other. Likewise, the accessories chosen for display on a table or in a bookcase should also balance with each other. The type of balance used helps determine the mood of a room. Formal balance creates an air of formality. Informal balance creates a casual atmosphere. In 12-7, the wood columns and entry lights on both sides of the front door create formal balance.

Also in 12-7, the arrangement of furniture and accessories illustrate informal balance.

Emphasis

Emphasis creates a center of interest or focal point in a room. It is the feature that is seen first and repeatedly draws attention. Every well-designed room has a focal point. With one area of emphasis, the eyes are immediately drawn to that point when you enter a room. This gives a feeling of stability and unity to the room. When planning a focal point, keep the following guidelines in mind:

- The focal point should be worthy of the attention it will receive.
- The focal point should dominate the room, but not overpower it or the design.

Architectural features, such as picture windows and fireplaces, can provide a focal point for a room. On the other hand, you can create a focal point through the use or special placement of various items. These include furniture groupings, colorful rugs, striking works of art, mirrors, shelves of books or other collections. See 12-8. Unusual accessories and objects, or their placement in a room, can also serve as focal points. For example, a beautiful piece of antique furniture in a contemporary setting is eye-catching. Likewise, the inclusion of contemporary sculpture as an accessory in a very traditional setting could create a prominent focal point. Special lighting cast upon a significant object can also create a focal point.

Chapter 12 Using the Principles of Design

277

12-5

The symmetry created in this stairway is an excellent example of formal balance.

12-6

The arrangement of these accessories is an example of informal balance.

12-7

Both formal and informal balance are represented by the placement of furnishings and accessories in this space.

12-8

The focal point of this room was created by the placement of striking artwork over the fireplace.
The focal point gives order and direction to a room. Everything else in the setting should relate to it through color, texture, proportion, scale, and theme. Color is usually the first aspect of a focal point to catch one’s attention. Carrying it throughout the room in accessories, window treatments, and upholstery fabric can further emphasize the focal point in similar ways.

The size of the point of interest should be in proportion and scale to the room and its furnishings. A massive focal point will be too large for a small room. However, a large room or a room with a cathedral ceiling demands a focal point that will not be dwarfed by the room size.

How a room will be used determines the theme of the room. The focal point should set the stage for the furnishings. For example, a living room will be used for entertaining, a dining room for socializing, and a bedroom for relaxing. If the fireplace is the focal point, comfortable seating that permits socializing should be grouped around the fireplace.

Rhythm

*Rhythm* smoothly leads the eyes from one area to another in a design. Rhythm results when an element of design forms an organized pattern. For example, a continuous line found in window and door frames produces rhythm. Rhythm can be achieved through repetition, gradation, radiation, opposition, and transition.

All types of rhythm are based on some repetition. Rhythm by *repetition* is created when an element of design—such as color, line, form, or texture—is repeated. Repetition is one of the easiest ways to achieve rhythm in a design. For instance, a dominant color can be repeated throughout a room. Lines that are repeated in shelves of a bookcase create rhythm. See 12-9. Repetition of form is found when rectangular end tables and a rectangular coffee table are used in the same setting. Texture may be repeated in fabrics used in draperies and upholstery. Gradation is the type of rhythm created by a gradual increase or decrease of similar elements of design. The eyes travel through the levels of progression. For example, color value can change from dark to light or from light to dark. Lines can vary from thick to thin in a design. Objects that have the same form can increase or decrease in size. See 12-10. Textures can range from smooth to rough.

In rhythm by *radiation*, lines flow outward from a central point, as in a wagon wheel. See 12-11. Sunburst designs are examples of rhythm by radiation. In home furnishings, radiation can usually be found in accessories. For example, a flower arrangement or a cushion may have radiating lines. A window that forms a half-circle with a sunburst design is a good example of rhythm by radiation.

In rhythm by *opposition*, lines meet to form right angles. Rhythm by opposition is often found in the construction of a room as well as in the furnishings. It can be found at the corners of windowpanes, picture frames, fireplaces, tables, and other furniture. Rhythm by opposition also exists in floor treatments, as in 12-12. It can also be created in simple ways as you accessorize and decorate. For instance, a row of books may be held in place by three books lying on their sides. The three books form a right angle to the other books on the shelf.

Rhythm by *transition* is created when curved lines carry the eyes from
one part of an object or room to another part. See 12-13. Transition leads the eyes in, through, and over an object until they have seen the whole object. Curved lines are found in architectural features and in furnishings. An arched window will lead your eyes from one side to the other. A drapery swag will draw your attention from one part of the drapery to another.

Goals of Design

As you work with the elements and principles of design, you need to keep in mind the goals of design. The goals of design are function and appropriateness, harmony with unity and variety, and beauty. These goals help make sure that your design works together as a whole. The use, convenience, and satisfaction of household should also be considered as you work to achieve the goals of design.

Function and Appropriateness

Function and appropriateness are closely related. If furnishings serve their various functions, they are considered appropriate. Rooms and furnishings within the rooms have functions that are determined by the people who live there. When furnishings provide service, comfort, and pleasure with minimum care, they are considered functional and appropriate. There are three guidelines to follow when thinking about function and appropriateness in the home.

- Furnishings should be appropriate for each room. For instance, a living room is not an appropriate place for a refrigerator.
- The form of furnishings should be appropriate for their function. Their designs should adapt to the structure of the human body. Their arrangements should meet the needs to reach, stand, sit, and move within a room.
- Above all, your home should be appropriate and functional for all members of the household. It should fit the personalities, lifestyles, needs, and wants of those who live there.

Harmony with Unity and Variety

Harmony is an agreement among the parts. It is created when the elements of design are effectively used according to the principles of design. One idea is used and carried throughout the design.

Harmony in design can be compared to the beautiful sounds of an orchestra in concert. The instruments or “elements” are in tune, so the resulting sound is harmonious. The total effect is more important than any of the parts.

Harmony results when there is unity among the elements. Unity occurs when all parts of a design are related by one design idea. When unity is present in a design, you see the room as a whole—not as separate pieces. See 12-14. Unity is achieved by repeating similar elements of design. For example, the furnishings and accessories in a room may all be square or rectangular. This ties the room together.

It would be monotonous, however, for the room to have only square and rectangular furnishings and accessories. By adding a few circular or triangular accessories, variety can be created. Unity with some variety makes a design more interesting. See 12-15. Without variety, the limitations on the elements and principles of design can result in a boring, lifeless room.

While some variety is needed, too much variety can cause confusion. Variation is like seasoning in food. The right amount of a seasoning makes the food tasty. Too little or too much may make it unacceptable. Consequently, the goal of good design is unity with some variation.

When working to achieve harmony, let only one type of each element of design dominate. For example, one color should dominate. This color can be the base color of your color harmony. Smaller amounts of a coordinating color can be used as an accent. This will assure harmony and unity with variety in the design. The overall appearance of a room will be pleasing. If several colors are used in equal amounts, the room may be a confusing combination of parts.

Beauty

In addition to being a characteristic of design, beauty is also a goal of design. Each person has a unique concept of beauty. However, the word beauty is generally used to describe well-designed and pleasing objects. The elements and principles of design have been developed as a result of studying objects that most people consider beautiful. If elements of design are arranged according to the principles of design, the result will appear beautiful to most people. The separate elements enhance one
another and heighten the overall effect of beauty. Beauty gives a house, its furnishings, and its surroundings a distinction. Although beauty is not the only goal in planning and furnishing a home, it is what makes the visual appearance memorable.

Sensory Design

Good design responds to all sensory needs and serves people of all ages, sizes, and physical capabilities. Design that considers the senses enriches the total environment.

Sensory design is the application of design that affects the senses of sight, hearing, smell, and touch. It is used to make housing more accessible and functional for people with disabilities as well as those without disabilities.

Most types of design affect the sense of sight. People can tell if they like a design by how it looks. With housing design, however, the other senses need to be considered, too.

Using specific materials in construction and design can control the noise levels in a room. For instance, hard and smooth surfaces make sounds louder. Rough and soft surfaces absorb sound, which creates a quiet atmosphere. See 12-16. As you design a room, think about what kinds of sounds you want to hear in the room. Then think about the kinds of materials you need to include in your design to create this atmosphere.

The smell of a room can evoke feelings and emotions. Fresh flowers placed in a room may provide a fragrance that many associate with elegance. A lemon scent used in cleaners can create the impression of freshness. Pine reminds people of the outdoors. Candles, herbs, and spices used as accessories in design can create certain atmospheres in a room. See 12-17.

The sense of touch also affects your response to design. The texture of various materials used in design can communicate specific feelings. Marble is cold and hard, silk can be soft, and wood can be rough or smooth. People who are visually impaired rely on their sense of touch to direct them. For example, Braille used in elevators helps them identify specific floors.

The temperature of a room also affects design. As explained in Chapter 11, “Using Color Effectively,” the choice of colors used in a room can convey either warmth or coolness. Also, people are sensitive to actual temperature changes, which can affect their comfort level. Heating and cooling systems are used to keep a room comfortable.
Summary

The elements of design are applied by using design principles. The principles of design are proportion and scale, balance, emphasis, and rhythm.

Proportion and scale are both used to describe size, shape, and amount. They are also concerned with the relationships of objects and parts of objects. Guidelines for using proportion are the golden rectangle, the golden mean, and the golden section. Visual weight, an aspect of scale, is a perception that an object weighs more or less than it really does.

Balance can be formal or informal. It is a perception that both sides of an imaginary centerline are equal. Balance can be attained through the arrangement of objects and the use of color, texture, and form.

Emphasis creates a focal point in a design. The focal point gives order and direction to a setting.

Rhythm leads the eyes from one area to another in several ways. The design may be repeated. Gradation may be used to gradually increase or decrease similar elements. Lines may flow outward from a central point or meet to form right angles. Curved lines may carry the eyes from one part of an object to another.

The goals of design can be achieved when the elements and principles of design are used together well. The goals of design are function and appropriateness, harmony with unity and variety, and beauty. Sensory design incorporates the senses into design.

To Review

1. True or false. A sofa with an adjacent coffee table is more pleasing in a 1:2 ratio than in a 2:3 ratio.
2. Large-scale furnishings need _____-scale accessories.
3. Define formal balance and informal balance. Sketch an example of each.
4. How can emphasis be used to create a focal point? Give an example.
5. List the five kinds of rhythm.
6. How are the design goals of function and appropriateness related?
7. What can be done to avoid monotony in a harmonious design?
8. What is the relationship between beauty and the elements and principles of design?
9. Give an example of how sensory design can benefit you.

In Your Community

1. Visit a furnished model home. If one is not nearby, visit a local furniture store that displays room settings and select your favorites for the following: a living room, dining room, and bedroom. Identify how the principles of design are represented in the home (or room displays). List the principles and explain how they are represented. Does the home (or room displays) meet the goals of design? Give examples of how each goal is or is not met. Share your findings with the class.
2. Interview someone in your community who has a special need or physical disability. Determine ways that good housing design can enhance the quality of his or her life. What elements of sensory design could be used to make the home more accessible and increase the enjoyment of the space?
3. Look around your school and identify where the golden rectangle, golden mean, and golden section are used. If they are not used, make suggestions where they could be applied. Write a one-page paper on your observations.

To Think About

1. Imagine that you rent an apartment on your own and need to design your living room, which currently is empty. Consider your lifestyle and personal preferences. What would you select for the focal point of this room? What other accessories would you include in the room to complement the focal point? Then, consider a focal point for your family’s current living room. What would you recommend? Remember to consider the personal preferences and lifestyles of all household members.
2. What would you do if you bought a furnishing or accessory that you later found had offensive sounds, aromas, or textures? For example, suppose you take the following new purchases home, only to discover “problems”—a clock that ticks too loud, pottery with an unpleasant smell, or a chair with upholstery that scratches. When trying to return the items, how would you explain the “problem” to the store manager? Do you think he or she would understand and refund your money? Why or why not?
Using Technology

1. Working within a team of three or four classmates, assemble a variety of room accessories such as books, bookends, plants, clocks, pictures, photographs, baskets, sculptures, and vases. Create an area in your classroom for display, such as a long desk or bookshelf. Take turns arranging the accessories in different ways to give examples of both formal and informal balance. Take photos of each design with a digital camera. Identify how the principles of proportion, scale, balance, emphasis, and rhythm are displayed in each photo. Discuss what you notice about the visual weight of the accessories as you change their position in each arrangement. Record your observations on paper and share them with your teammates.

2. Using a computer-assisted design software program, design a wall, against which is placed a chest or large piece of storage furniture (as is used in a dining room or bedroom). Create five different designs and make a printout of each. Ask your classmates to vote for their favorite design and explain the reason for their choice. Was the vote unanimous? How can you explain the differences?