

The World of Architecture



Objectives

After studying this chapter, you will be able to:

- Identify the historical influences that helped shape today's home designs.
- Recognize and describe the elements of contemporary dwellings.
- Discuss current trends and influences in architecture.
- Identify types of multifamily housing.

Key Terms

Americans with Disabilities Act (ADA)	Garrison
Apartment	Multifamily housing
Cape Ann	New England
Cape Cod	Gambrel
Condominium	Postmodern
Contemporary (Modern)	Architecture
Cooperative	Ranch
	Salt Box
	Southern Colonial

The fascinating study of architecture encompasses a sensitivity to design, skill in drawing techniques, and a knowledge of the latest construction materials. It is the combination of these abilities that yields today's outstanding architects. These architects design the massive high-rise buildings, quaint lakeshore cottages, modern churches, and family homes required to meet the needs of our society.

The world of architecture is all around us. It has been one of the major achievements of humankind to design structures that bring the thrill of lasting beauty to the eye of the beholder. Whether it is a symbolic monument or a long awaited residence, a rewarding experience and years of pleasure belong to the architect and to those who view the structure, Figure 1-1. Some structures are designed for commercial and industrial use while others are planned for organizations or private living, Figure 1-2. The emphasis of this book is on the design, architecture, and study of residential structures. However, the relationships of line, form, and material of almost any structure has an impact on home construction.

People and Their Structures

Over the years, a number of architectural styles have been developed for house construction. Many of these styles developed so that structures would be suited for the climate and needs of families in various parts of the country. Others were planned especially for luxurious living, Figure 1-3. All of the factors that led to development of various styles provide a historical background that still



Figure 1-1. This computer-generated rendering shows a contemporary home that makes a strong statement through its interesting roof and strong architectural lines. (Helmuth A. Geiser, Member AIBD)

influence the design of today's homes. Some house styles became so popular that they took on names related to their shape, period of time, or area of the country in which they were

built. The emphasis in this chapter is given to the design qualities that people have used over many years and now are imitated or incorporated into modern homes.



Figure 1-2. This multifamily dwelling, reminiscent of an earlier architectural style, was planned and designed by an architect.

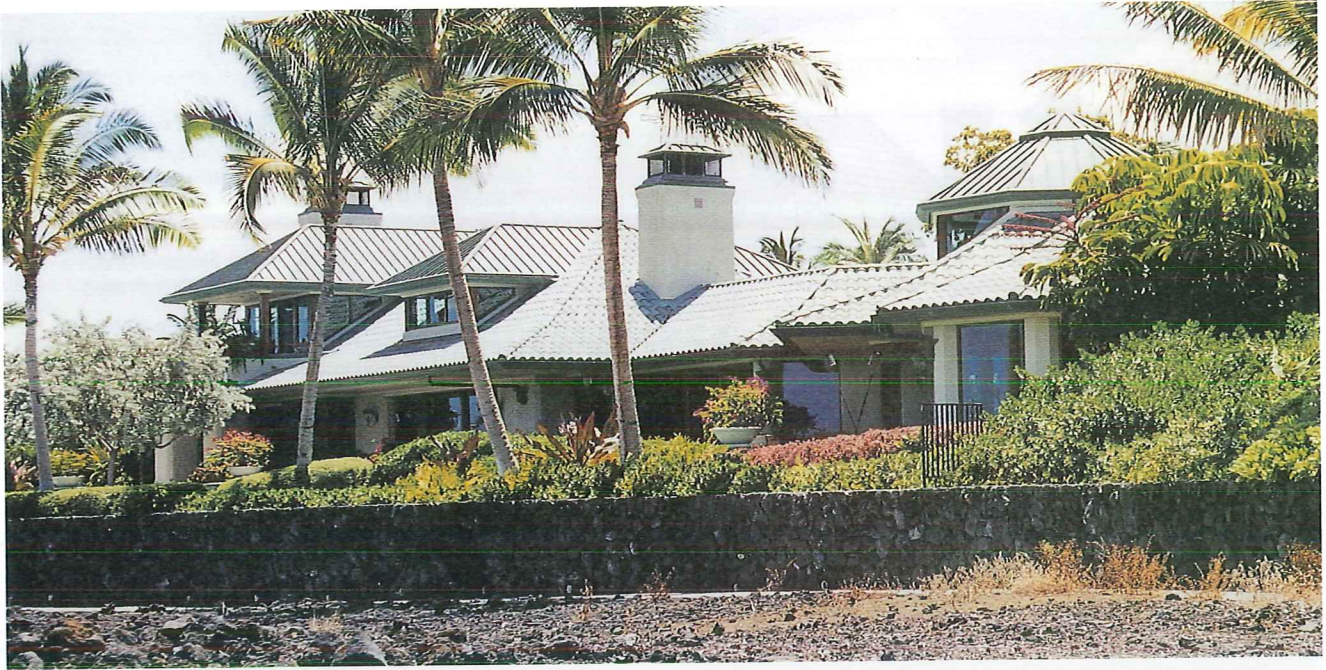


Figure 1-3. This large, expensive home was designed for luxurious living with accommodations for an occasionally harsh environment. It is a seafront residence with a seawall to protect the landscaping and house from wave surges.

The Cape Colonials

Two very popular home styles developed over 200 years ago are the Cape Cod and Cape Ann. These traditional homes have influenced structural design since they were first conceived. People have enjoyed them for their aesthetic appeal. They provide a comfortable and livable atmosphere with large and functional rooms.

The *Cape Cod* is one of the earliest and best known of the traditional Colonial styles. It originated as a fairly small house with a steep roof and little overhang. A chimney accommodated the necessary room fireplaces. These homes were normally built as one- or one-and-one-half-story buildings. However, the same features have been incorporated in two-story styles. The eaves line is always near the top of the windows, ending with a gable roof. Narrow trim lines of the siding, which appealed to New Englanders many years ago, are still used on these homes. Shutters are generally used on all windows, giving emphasis to the white or yellow painted siding that was preferred in earlier times. Many variations of the Cape Cod are used in today's structures, Figure 1-4.

Another example of the Colonial style used in modern construction is the *Cape Ann*, Figure 1-5. This differs from the Cape Cod in many respects. The chimney is centrally located and is usually larger. The tapering gambrel roof encloses an attic that is often converted into extra rooms. A growing family may take this into consideration when planning their first home. Modern use of the Cape



Figure 1-4. This is a refined version of the traditional Cape Cod style. Later Cape Cod houses have dormers on the second floor. Many also have shutters.

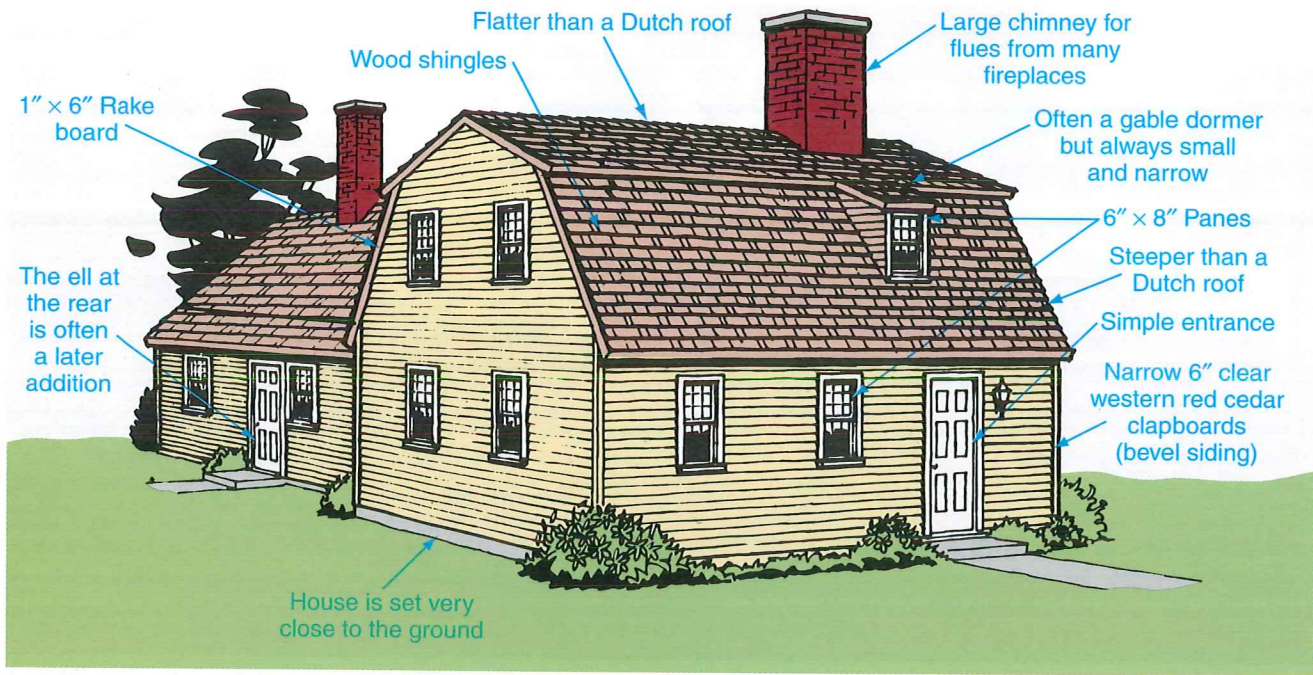


Figure 1-5. This rendering of a traditional Cape Ann style shows some of the differences between it and a Cape Cod style. Many modern homes are distinguished by features taken from this early structure. (Western Wood Products Association)

Ann characteristics provides a house with simple lines, sound construction, and a feel of colonial atmosphere. It makes a particularly attractive house along a tree-shaded avenue or in a wooded development.

The New England Gambrel

The *New England Gambrel* is a variation of other colonial styles, Figure 1-6. It features the gambrel roof where the pitch is abruptly changed between the ridge and eaves. Inherently American, the style is now used in most every section of the country. An advantage of the gambrel roof is the extra headroom and usable space. The shorter rafter lengths required can result in lower cost. Many adaptations of this architectural style provide pleasing and enduring homes for today's families.

The Garrison

A modern presentation of the traditional *Garrison* is an attractive house that includes a number of special features, Figure 1-7. A

distinguishing feature is the overhanging second story. This construction technique includes a number of advantages. (1) The separate corner posts on each floor make it possible to use shorter, stronger posts. (2) The short, straight lines provide an economy in framing materials. (3) Extra space is added to the second level by the overhang at very little extra cost. The steep pitch roof adds attic space. Figure 1-8 shows the traditional Garrison from which modern design features have been developed. Narrow siding helps maintain the traditional styling in modern homes.

The Salt Box

An interesting and easily recognized Colonial style is the *Salt Box*, Figure 1-9. It is a direct offshoot of the basic colonial half house, which results in a long roofline sloping gently from the ridge to the eaves. Many of today's beautiful homes have borrowed from this distinctive style, developed by master builders of early America. The Salt Box house gets its name from the shape of coffee, tea, cracker, and salt boxes found in Colonial stores. The



Figure 1-6. The typical New England Gambrel style is adapted to this contemporary house.

side elevations of these containers had the same general shape as this fascinating architectural style. Variations of this style are used to enhance many new homes.

The long, low roofline at the rear of the Salt Box house came about by the addition of "lean-to" structures to add more living space. The low slanting roof was also helpful in



Figure 1-7. A contemporary Garrison home retains the straight-line features and overhanging second story of the original style.

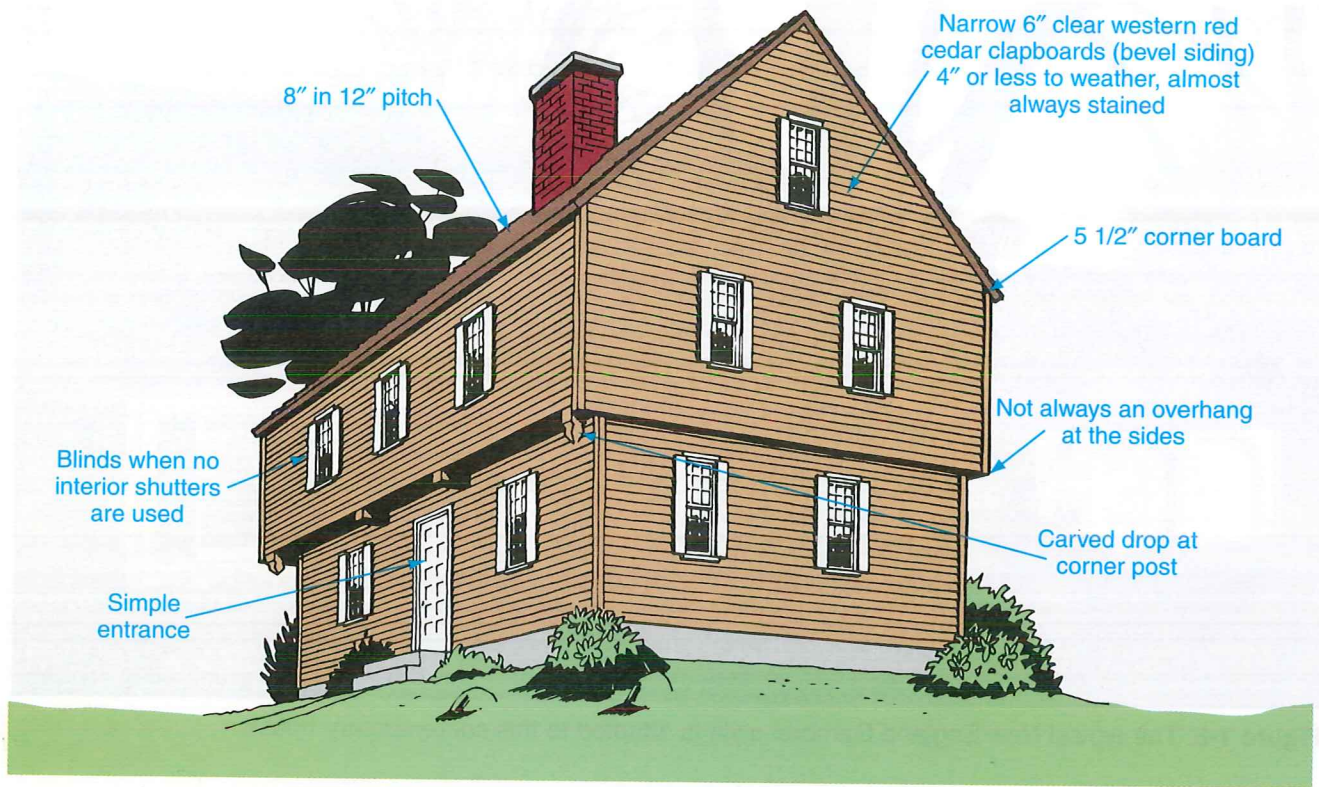


Figure 1-8. The distinguishing characteristics of the traditional Garrison home. (Western Wood Products Association)



Figure 1-9. The style of this modern home is a beautiful representation of the early New England Salt Box home.

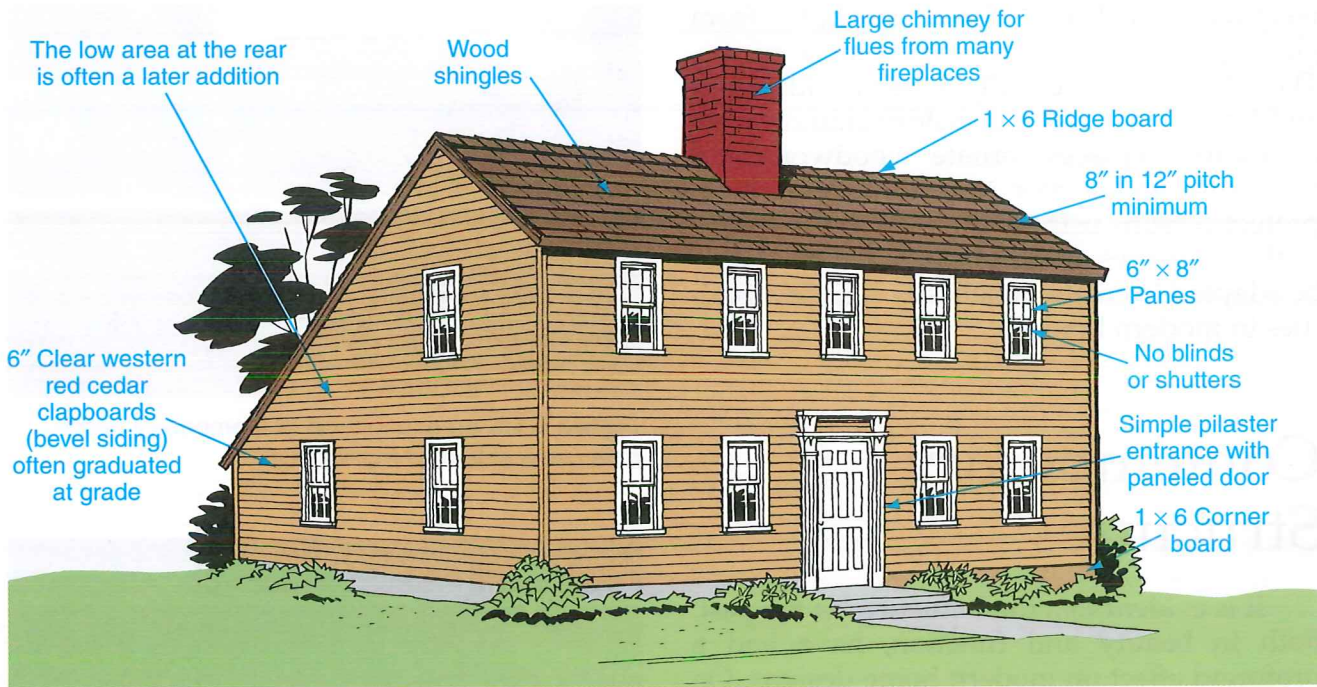


Figure 1-10. The styling features of the original Salt Box home with wood roof shingles, narrow wood siding, and no shutters. (Western Wood Products Association)

combating the bitter winds common to New England winters. The basic original style of the Salt Box house is shown in Figure 1-10.

The Southern Colonial

One of the most gracious of all the Colonials is the traditional *Southern Colonial*.

The style reflects the warmth, quaintness, and hospitality of the old south, Figure 1-11. Modern examples borrow many of the fine details of the Southern Colonial to express a mood of elegance and traditional charm. The outstanding architectural features are the front colonnade and the giant portico. The extended portico shelters the front entrance from the



Figure 1-11. The most gracious of all Colonial home styles is the Southern Colonial.

weather and keeps direct sunlight from glaring into the first and second story rooms. These homes were usually massive with upper and lower balconies, three-story chimneys for bedroom fireplaces, ornate woodwork and iron trim, and a roof over the driveway to protect persons using the side entrance. Many of these features of the Southern Colonial may be adapted to create esthetically pleasing qualities in modern homes.

Contemporary Structures

It is evident that the influences of the past, both in beauty and function, have had a profound effect on modern home designs. On the other hand, many new materials, appliances, and modes of living have caused the architect to “think out” ways to plan homes for all styles of modern living. The modern American home is a combination of many of these factors.

The Contemporary Style

The style of home that is generally called *contemporary* is the result of years of architectural planning, design, and evolution. Many are well planned, yet others lack imagination or design balance. Some inexpensive homes are functionally satisfactory for a family, yet the exterior styling may have to be quite conservative in the use of a variety of materials for economical reasons. See Figure 1-12. The ability of the architect and the needs or finances of the family are factors that generally dictate the type of construction being planned. Figure 1-13 shows the use of various materials and expensive detailing in a modern home.

The term “contemporary” or “modern” does not denote any one particular architectural style. Most modern homes borrow some distinctive features from more traditional structures, while others appear almost independent of past designs, Figure 1-14. However, to an architect it is not important to determine what defines a contemporary style. The most



Figure 1-12. An economical contemporary home built using standard materials.



Figure 1-13. Multiple materials, coordinated lines, and intricate details give an architectural flair to this contemporary style home. These same factors also result in this house being expensive to construct. (Photo Courtesy of James Hardie® Siding Products)



Figure 1-14. Unique styling is featured in this contemporary residence. Notice the strong vertical lines and bold use of curved glass block.

important job for the architect is to design homes that satisfy the customers; homes they can live in with pride and joy. In today's society, individual tastes vary to the extent that many people desire a house that is distinctly different from other houses. The owner may feel that the house represents a particular style of living and individuality, Figure 1-15. One



Figure 1-15. Individuality is emphasized in this home through the unique treatment of space.

owner may enjoy the warmth of natural wood, Figure 1-16; another owner may like the solid structural design of a brick home, Figure 1-17.

The rapid developments of new construction materials and methods of fabrication have made it possible to design homes that require minimal maintenance, Figure 1-18. An architect can easily make extensive use of glass for appearance and interior light, Figure 1-19. An architect may also choose to place emphasis on exposed structural members to create a distinctive style, Figure 1-20.

The Ranch Design

One prominent modern architectural residential style is the *ranch home*. This is basically a long, low, one-story house style that developed from the homes built by ranchers in the southwestern US, Figure 1-21. The basic ranch design generally has a low-pitch roof with gables and overhanging eaves. A ranch house is traditionally built on a concrete slab with no basement. However, over the years, ranch homes have taken on many newer features, Figure 1-22. They now usually have a one- or two-car attached garage and a basement.



Figure 1-16. This attractive home makes use of wood siding with a natural finish combined with large areas of glass. (AGS&R Studios)



Figure 1-17. A traditional brick home communicates the feeling of permanence.



Figure 1-18. Homes can be designed to require minimal maintenance. Materials such as vinyl or solid aluminum siding, gutters, downspouts, ornamental shutters, fascia, and soffits are attractive and easy to clean and maintain. (Norandex/Reynolds Building Products)



Figure 1-19. Large areas of glass are used extensively in this contemporary home. (California Redwood Association)



Figure 1-20. Visible roof supports are part of a dominant design element in this home. (Cultured Stone by Stucco Products, Inc.)

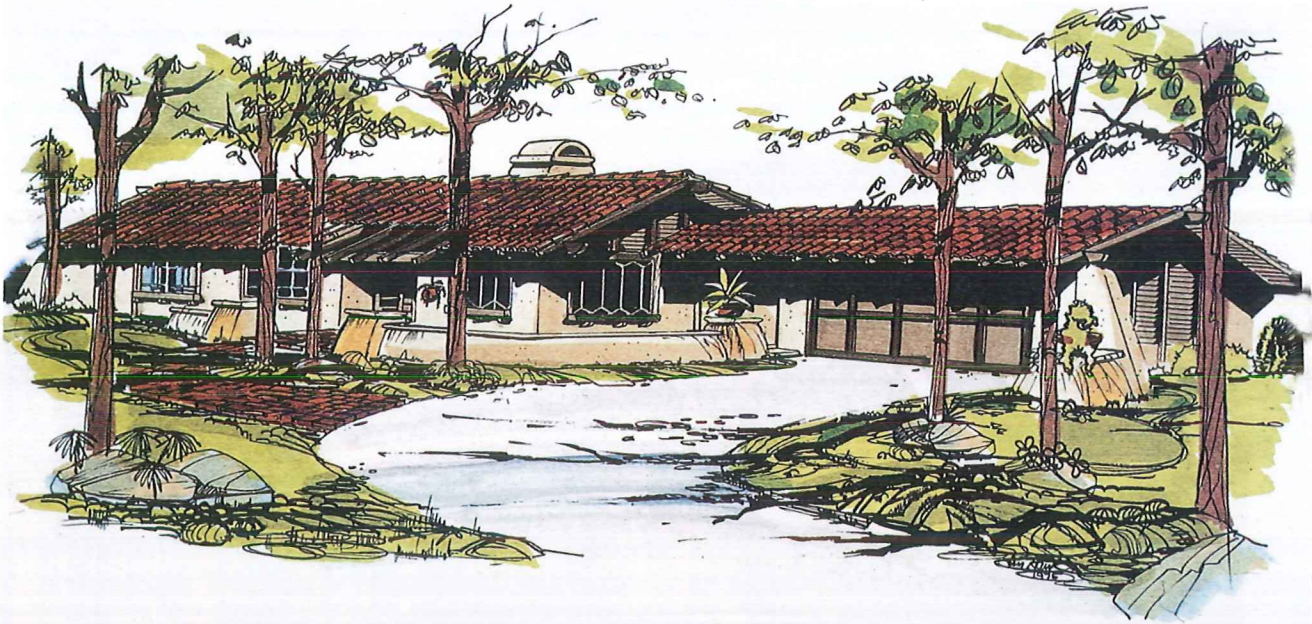


Figure 1-21. This rendering is of a ranch-style home with Spanish design influences. (Ken Hawk)

Many modern ranch-style homes have an L-shape layout to add interest and break up the straight-line effect. Skylights and cathedral ceilings are other variations found in some modern ranch homes.

New design concepts and additions to the basic ranch style have probably added more to the development of contemporary or “futuristic” homes than any other major factors, Figure 1-23. The ranch has twists, turns,



Figure 1-22. This thoroughly modern ranch home exhibits architectural detail designed to set it apart from traditional ranch homes. (Arthur Rutenberg Homes, Inc.)



Figure 1-23. This home contains the basic elements of the ranch style yet incorporates many contemporary architecture details.

angles, and curves added from the imagination of the architect of today and tomorrow.

Trends in Architecture

It is interesting to note that future home styles give the architect a freedom of design seldom known in the past. As indicated earlier, the multitude of individual preferences, materials, and structural techniques predicts a variety of unique expressions for architectural designing. Many new homes are designed for stately or dramatic effects, Figure 1-24 and Figure 1-25. Others are styled for particular settings, such as hillsides, seashores, and even cliffs, Figure 1-26 and Figure 1-27.



Figure 1-24. The stately appearance of this two-story home is achieved with use of various building materials and interesting designs.
(Photo Courtesy of James Hardie® Siding Products)



Figure 1-25. The complex layout of this home creates a dramatic effect.



Figure 1-26. This modern residence was designed for a seashore setting.



Figure 1-27. The roof design, use of glass, and structural materials of this residence are particularly suited for the arid climate. (Cultured Stone by Stucco Stone Products, Inc.)

The trends in architecture appear to be leaning toward dramatic, yet comfortable, living styles. Homes that complement the site, provide a feeling of openness, and still retain the required privacy are always being developed. Figure 1-28 shows a residence designed to both convey spaciousness and take advantage of the natural surroundings of the site. Figure 1-29 shows a home designed to provide a vertical solution to a small city site.

A current trend in architectural design that is receiving strong support is called *post-modern architecture*. This trend or “style” combines traditional and contemporary influ-



Figure 1-28. Attention to detail in every aspect of this modern home blended together with a sense of unity produces a superb family residence.



Figure 1-29. This house, reminiscent of traditional architectural design, fits comfortably on a small city lot.

ences into designs for truly modern structures that are strongly reminiscent of popular styles of the past. See Figure 1-30 and Figure 1-31. However, modern materials and building techniques are used to produce energy-efficient and weather-resistant homes.

Another trend in residential architecture is the renovation of older homes. Many older homes are structurally solid and may be



Figure 1-30. An example of postmodern architecture that combines traditional and contemporary influences. (Armstrong World Industries, Inc.)



Figure 1-31. An example of a postmodern structure that is strongly reminiscent of Georgian architecture. (Photo Courtesy of James Hardie® Siding Products)

restored to their original beauty with some care and attention. Figure 1-32 shows an historic early Victorian home that was saved from demolition. Figure 1-33 shows a restored late Victorian home that is still very functional today. The photos in Figure 1-34 illustrate the dramatic impact that thoughtful restoration can have even on less-dramatic traditional homes.

Experimentation with new materials and design concepts continues to produce radically

new structures. Earth-protected homes and dome structures are two categories of homes that have resulted from experimentation with new ideas. A dome home that uses triangular sections bolted together to enclose a large interior space free of support partitions is shown in Figure 1-35. This structure is very energy efficient and flexible in terms of interior space utilization. The basic structure can be erected in a very short time since the modules are prefabricated and hauled



Figure 1-32. A restored early Victorian home that maintains the strong design influence of the past.



Figure 1-33. Elements of Victorian architecture, as shown in this restored structure, still show elegance today. (Norandex/Reynolds Building Products)



A



B



C



D

Figure 1-34. These two homes have undergone restorations. A—Before restoration. B—Restored home. C—Before restoration. D—Restored home. (Norandex/Reynolds Building Products)



Figure 1-35. This dome home is constructed from manufactured triangular sections assembled on-site to produce the roof and walls of the structure. (Linda Lindeman)

to the site. The exterior skin may use traditional roofing materials such as asphalt shingles.

Multifamily Housing

The homes discussed to this point in the chapter are single-family residences. This means that a single family “unit” resides in the structure. However, there are other types of housing that are considered *multifamily housing*. This means that more than one family “unit” lives in the structure. Examples of multifamily dwellings include cooperatives, condominiums, and rental apartments, Figure 1-36. Other “dense” residential dwellings include tract houses, some manufactured houses, and mobile homes. These are considered “dense” because many structures are placed close together with little or no yard space.



Figure 1-36. This apartment building houses about a dozen families in one structure. The apartment management is responsible for the maintenance of the building, landscaping, and common areas. (Norandex/Reynolds Building Products)

Cooperatives

The term *cooperative* or “co-op” refers to a type of ownership, not a type of building. Cooperative ownership is most common in multifamily dwellings. Each family’s living space is usually called an apartment.

Cooperative ownership combines the advantages of home ownership with the convenience of apartment living. Under a cooperative, an apartment building is managed and run as a corporation. The buyer purchases stock in the corporation that runs the building and, as an owner, receives an apartment. The value of the apartment determines the amount of stock purchased. The buyer receives a lease that grants them exclusive right to possession of the apartment.

Since the buyer owns the apartment, they do not pay rent. The buyer does, however, pay a monthly fee that is used to pay the property taxes and maintenance costs of the building. The corporation takes care of maintenance and

repairs with the money collected from the stockholders.

Owners have a voice in how the co-op is run. This is an advantage over a rental apartment. Owners also have a say in who their neighbors are to be. Residents generally vote on whether or not a family should be allowed to purchase an apartment (stock) in the building. The major disadvantage of a co-op is that each member must abide by the wishes of the total group. If the group makes a bad decision, then all suffer.

Condominiums

Unlike the owner of a cooperative who buys stock, the owner of a *condominium* buys the apartment and a share of the common ground. The owner receives a deed to the apartment and pays taxes on it just as though it is a detached house. Owners of units in a condominium building have joint interest in

all the shared property and facilities. These may include hallways, laundry areas, parking lots, sidewalks, lawns, tennis courts, and swimming pools. Common property is maintained with money collected from monthly assessments, as it is under cooperative ownership.

An owner of a condominium unit may sell the unit without consent or approval of other owners. In matters relating to common property, each owner has a vote in proportion to the original value of the unit they own.

A condominium complex may consist of a single building or a group of buildings and surrounding property. It may even include a mixture of apartments, townhouses, and duplexes. The special feature of a condominium is that each unit is owned individually with a joint interest in common property.

Rental Apartments

Any type of dwelling may be rented, but *apartments* are by far the most common rentals. In many cases, several apartment buildings are planned and built at the same time in a group. This makes good use of the land and helps provide greater security.

Rental apartments have definite advantages for large segments of the population. They offer a variety of lifestyles and are readily available. Apartments are especially popular among young singles, newly married couples, elderly couples or singles, and low income families. This probably stems from the fact that rental apartments usually require less expense and effort in upkeep than other types of housing. In addition, rental apartments provide housing for those who do not have the money for a down payment on a purchase or have less than perfect credit and cannot qualify for a mortgage.

In recent years, many new apartments have been built in attractive settings with conveniences to meet almost any need, Figure 1-37. Choices are unlimited in terms of style, size, price range, and facilities. Apartments are often conveniently located near public transportation, shopping centers, and recreation areas. Another advantage is that they require little time or effort from the renter for upkeep and maintenance.



Figure 1-37. Rental apartments have definite advantages for certain segments of the population.

Disadvantages of rental apartments relate mostly to loss of control over the living space. Renters have little or no voice in how the apartment building is managed or maintained—although this has improved in recent years. Neighbors may move in and out so often that no true neighborhood spirit is developed. Also, money spent on rent is not applied toward ownership nor is it tax deductible. After paying rent for years, renters have no property to show for their payments. A home owner, on the other hand, has ownership of property and can take mortgage interest and property taxes as income tax deductions. In spite of the disadvantages, the rental apartment is the best answer to the housing needs of many people.

The Americans with Disabilities Act (ADA)

On July 26, 1990, the *Americans with Disabilities Act (ADA)* became law. The ADA makes it illegal to discriminate against disabled persons in the areas of employment, public and private transportation, and access to public and commercial buildings. The physical access requirements of the ADA affect both existing places of public access as well as new construction. However, the ADA is not a

building code—rather it is a civil rights statute. The ADA is enforced in the courts.

Title III of the ADA is the section of the law regarding public accommodations. The term “public accommodation” refers to privately-owned entities only. These include such places as hotels and motels; restaurants and bars; theaters; convention centers; shopping centers; banks; insurance offices; hospitals; professional offices of health care providers, lawyers, and accountants; museums; places of education; and daycare, senior, and recreation centers. Public accommodations do not include multifamily housing, which is covered under the Federal Fair Housing Act of 1988; private clubs; religious organizations; and public entities such as state or local governments or divisions thereof, which are

governed by different standards under Title II of the ADA.

For those establishments affected by the ADA, reasonable modifications may be required to remove architectural and communication barriers. Some typical modifications may include installing ramps and curb cuts, widening doors, eliminating turnstiles, installing raised toilet seats and grab bars, installing flashing alarm lights and telecommunications devices for persons who are deaf, adding raised elevator buttons for persons who are blind, and providing parking that will accommodate people in wheelchairs. In addition, depending on the use of the area, the paths of travel to bathrooms, telephones, drinking fountains, and other facilities may also need to be made accessible.

Internet Resources

- www.aia.org
American Institute of Architects
- www.architectural-ornament.com
Architectural Ornament, Inc., manufacturer of polyurethane architectural molding
- www.builderonline.com
Builder Magazine Online
- www.concretehomes.com
Portland Cement Association
- www.culturedstone.com
Cultured Stone, a producer of manufactured stone veneers
- www.designbasics.com
Design Basics, Inc., a home design service
- www.homesofelegance.com
Homes of Elegance
- www.saterdesign.com
The Sater Design Collection, Inc.
- www.wwpa.org
Western Wood Products Association

Review Questions — Chapter 1

Write your answers on a separate sheet of paper. Do not write in this book.

1. The needs of families and suitability for the local _____ have contributed to the structural styles of homes.
2. List the three major factors that the study of architecture includes.
3. Which of the following factors led to the name Salt Box for that particular style home?
 - a) Implement sheds.
 - b) Containers in village stores.
 - c) Early churches.
 - d) The shape of barn roofs.
4. What are three advantages of a Garrison style house?
5. What are the outstanding architectural features of the Southern Colonial home?
6. What is unique about the shape of the roof on a Gambrel style home?

7. Why do the terms contemporary and modern not describe a particular architectural style?
 8. The basic ranch home is a low, long one-story house with a _____ roof, gables, and overhanging eaves.
 9. New design concepts and additions to the basic _____ style have probably added more to the development of contemporary or "futuristic" homes than any other major factors.
 10. List four factors that appear to be influencing new trends in architectural design.
 11. A trend or "style" that combines traditional and contemporary influences is called _____.
 12. How does a condominium differ from a cooperative?
 13. What aspects of rental property might persuade a person to rent rather than buy a house?
 14. How is the ADA enforced?
 15. What is the basic purpose of the ADA?
3. Visit a local contractor and ask about materials currently used for exterior structural features. Ask for an explanation of each product and how each is used. Make a list of these materials and relate your findings to your class.
 4. Select a particular traditional style home. Cut out and glue together a cardboard model of that design. Sketch in doors, windows, siding, etc., and put the model on display in your classroom.
 5. Make a collection of catalogs from lumber dealers and suppliers. From this material, prepare a list of new materials that are available to replace older exterior structural devices. An example might be the use of aluminum or plastic gutters that replace galvanized iron gutters. Present this as a discussion with your class.

Suggested Activities

1. Call on an architect and ask the following questions. Write a brief report on the responses the architect has given you.
 - a) What particular style home is most in demand today?
 - b) How does one become an architect and why?
 - c) In what way does one communicate with clients to provide the style home they desire?
 - d) How does one determine from a client just what design features will be most appealing to them?
2. From magazine and newspaper clippings, make an architectural design folder illustrating as many home styles as you can find. Indicate on each home any design feature that has been borrowed from the past or gives an indication of a futuristic trend.