

The background of the slide features a light blue gradient. On the left side, there is a vertical strip showing a close-up of classical architectural columns with Corinthian capitals. The entire slide is framed by a thin brown border.

Basic home design

ITCD 315

Prof. Rajeev Nair

Primary Considerations



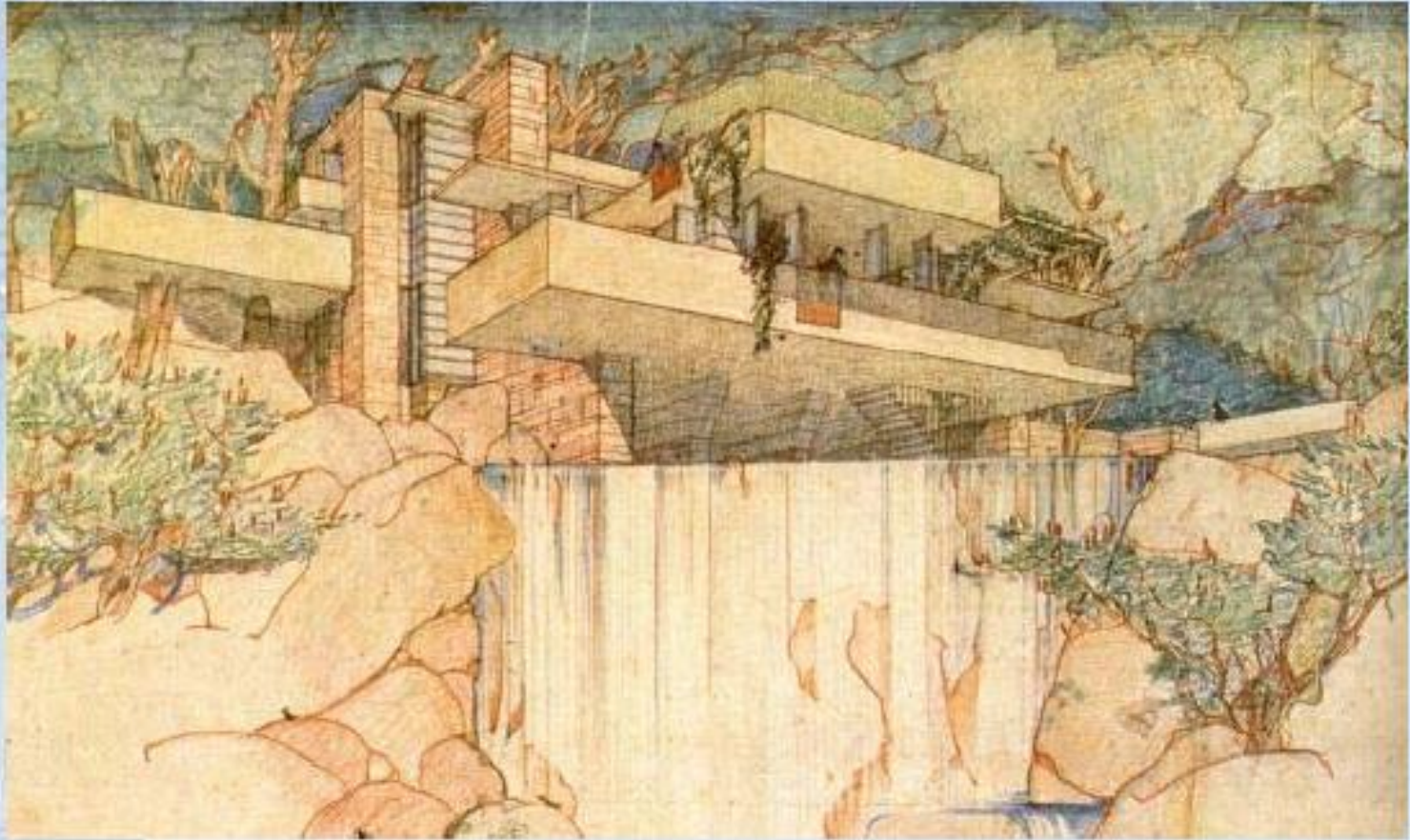
Primary considerations

- Cost/Restrictions – It is not possible to state the exact cost of what a home should be as there are many factors, the most quoted is “Location...Location...Location”. Some locations may restrict the size, style, overall cost, landscaping, etc. Easements may limit building to specific areas of a lot.
- Community – The neighborhood should be evaluated on the following points: 1) Is the community a “planned” community or one that has sprung up with no central theme or forethought; 2) Are the homes in this community in the price range of the proposed house? 3) Are the neighbors in about the same socioeconomic category as the prospective owner? 4) Is the community alive and growing or is it rundown and dying? 5) Does the community have room for growth or is it restricted? 6) Are the residents of the community people who take pride in their homes or seem indifferent toward them? 7) Does the community have modern churches, quality schools, and shopping areas? Are such facilities as fire protection, water, sewer, natural gas, and garbage collection available in this community? Is the site near the prospective owner’s workplace? 10) Is public transportation available in the community? Does the community have a high rate of turnover due to the resale of homes? These and many other factors relate to the site selection and eventually should be considered before selecting a site.
- Family Needs – A truly functional house will reflect the lifestyle of the family who occupy it. Family size will be a major consideration in a house design. Ample space should be provided for each member of the family to perform their chosen activities – Food prep, dining, entertaining, family recreation, hobbies, laundering, studying, dressing, sleeping, relaxing, working, storage, bathing, housekeeping, guest accommodations. Some activities are limited to certain areas of the home while others may be performed through out the home.

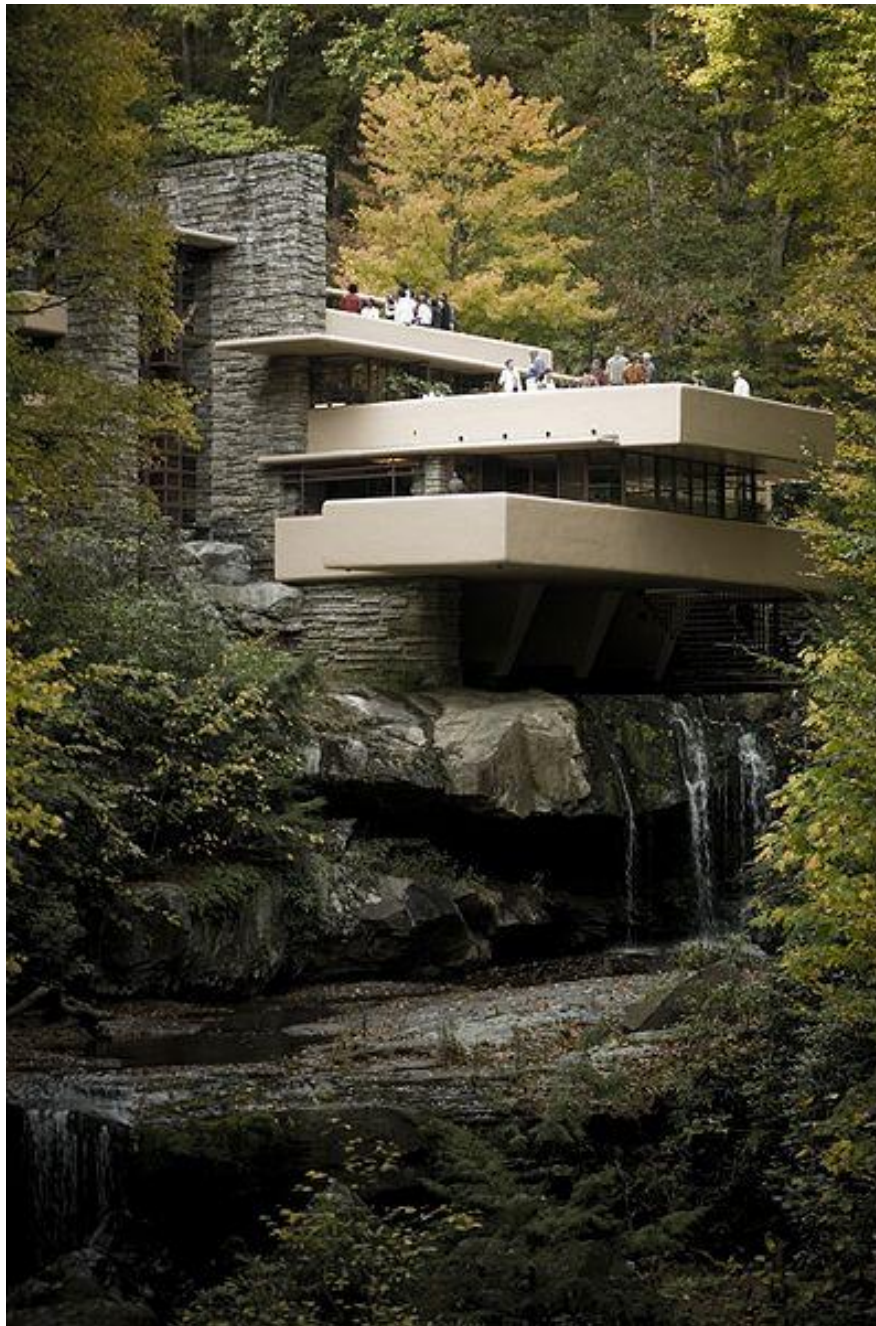
Primary considerations (contd.)

- Zoning/Codes – The type of building may be limited by zoning because the area is agricultural, commercial, single family, multiple family, etc. Building codes for an area may be so restrictive that certain types of home may not be built.
- Topography – Trees, rocks, and soil conditions may limit the type of structure that may be built on a site. The overall shape of the lot may be a factor.
- Quality – The location of the site, the characteristics of the site itself, the size and layout of the house, and many other factors all add up to a certain quality of living. It is the designers responsibility to take advantage of as many aspects as possible to increase the quality of living in the structure.

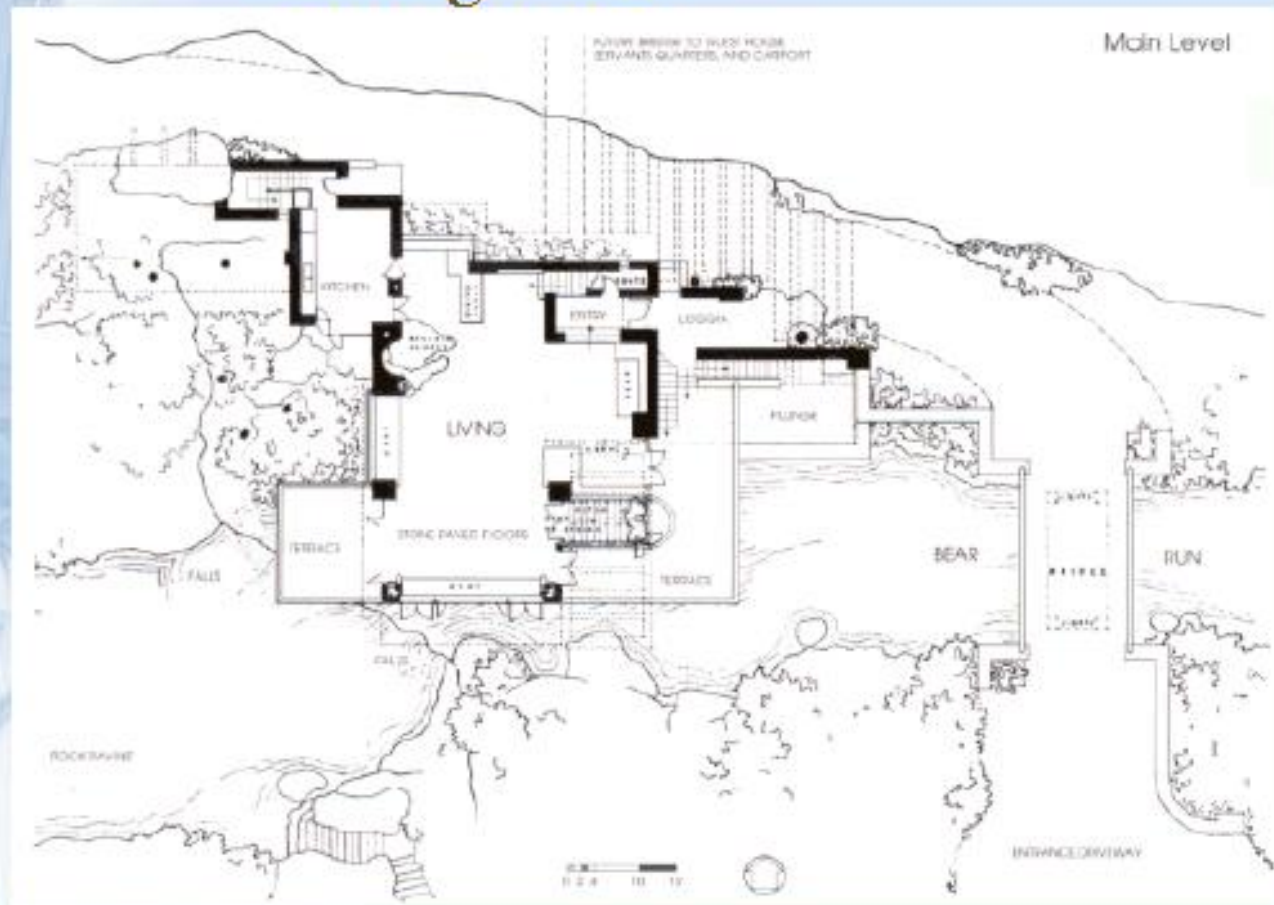
"Fallingwater"



Perspective drawing of the Edgar J. Kaufman house.



"Fallingwater"

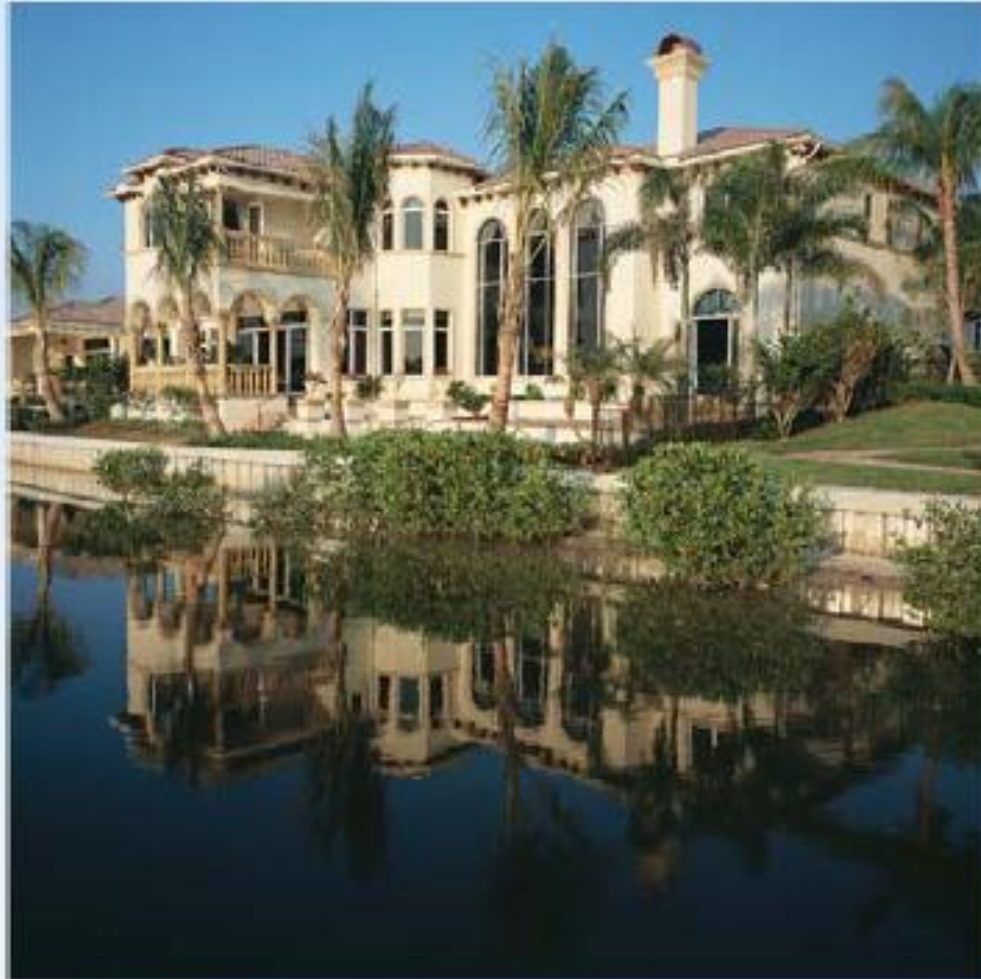


Floor plan of main level. Most of the house's floor space is devoted to the stone-paved living area with its various activity spaces. A high proportion of the living space is outdoors in the form of terraces, loggia and plunge pool below the living room.

William Allin Storer describes Falling water as "the best-known private home for someone not of royal blood in the history of the world." Perched over a waterfall on Bear Run in the western Pennsylvania highlands, the rural retreat constructed for Edgar J. Kaufmann, Sr., has also been called the fullest realization of Wright's lifelong ideal of a living place completely at one with nature. Reinforced-concrete cantilever slabs project from the rocks to carry the house over the stream. From the living room, a suspended stairway leads directly down to the stream. On the third level immediately above, terraces open from sleeping quarters, emphasizing the horizontal nature of the structural forms. Wright himself described Falling water as "a great blessing -- one of the great blessings to be experienced here on earth."

Over the years a number of architectural styles for house construction have been developed. Many of these structures were designed to meet climatic conditions and needs of families in various parts of the country. Others were planned especially for luxurious living.

Luxury Home



House for the 21st Century



A current trend in architectural design that is receiving strong support is called post-modern architecture. This “style” combines traditional and contemporary influences into truly modern structures which are strongly reminiscent of popular styles of the past. However, modern materials and building techniques are used to produce energy efficient and weather resistant homes.

Ranch Style Home



Ranch style home

The one-story house has all the regular living space on one level. It may have a basement, depending on the section of the country in which it is built.

One of the chief advantages of the ranch is that it lends itself beautifully to indoor-outdoor living. Patios, porches, and terraces may be added to virtually any room. Another advantage of this design is the absence of stairs...unless it has a basement. The ranch without a basement is popular with older and handicapped people.

The ranch usually has a low-pitched roof with wide overhangs since not headroom is necessary above the ceiling. The low-pitched roof and short walls make outside maintenance easy. Low height simplifies construction.

The long and low appearance of the ranch is pleasing to most people.

One disadvantage is that one-story homes are usually more costly to build than other designs of the same square footage. This stems from the fact that the one-story requires more roof area and more foundation length. It also requires a larger lot since it is spread out rather than up. Further more, this increased area sometimes causes heating / cooling problems for many parts of the country.

Two-Story House



Compared to ranch or single story houses, two-story houses are more economical to build and well as heat and/or cool.

In many locations, the two-story home is not popular now as in former years. One reason may be the turn to more contemporary styled houses. The two story house, unless located among other similar styles, may appear to be out of place.

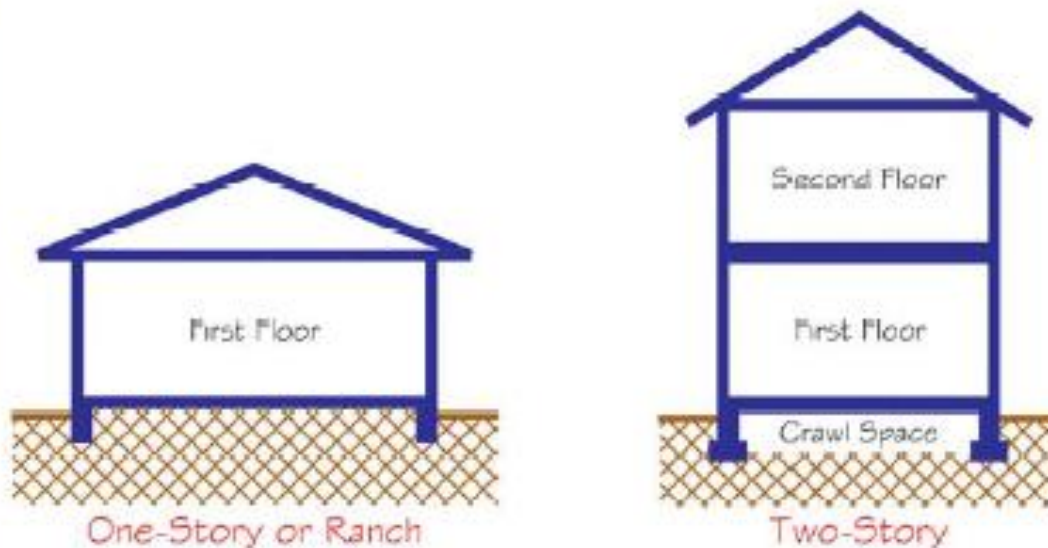
General exterior maintenance is usually more difficult and expensive because of the height. For some people the necessity of climbing stairs from level to level is considered a disadvantage. However, some styles may be adapted to include a stairway lift or elevator to provide greater accessibility. The two-story house does not lend itself to variations in style as well as some of the other designs.

Duplex Home



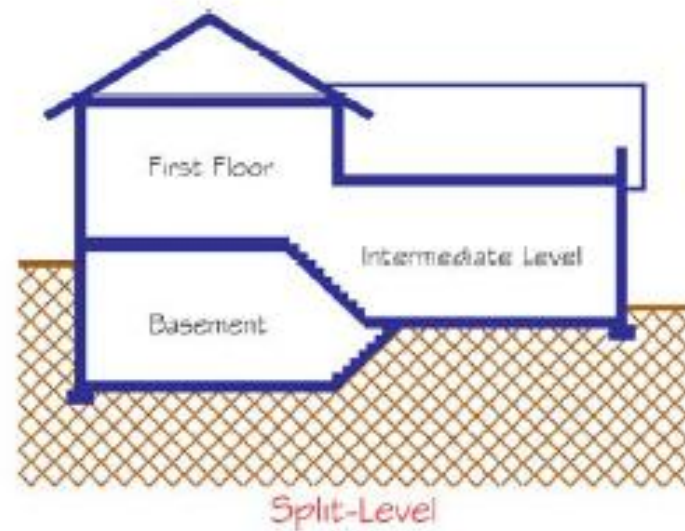
As land becomes more costly, duplex or townhouse style homes may be built to reduce the size of the lot that the home is built upon. In some locations, homes are built on zero-lot lines.

Basic Home Styles



A comparison of the foundation length and roof area of a ranch and a two story house having the same square footage of living area reveals the reason ranch is usually more expensive to build. A 2400 square foot ranch (single story) house would occupy an area 40 x 60 feet, have a foundation length of 200 feet and require a minimum of 2500 square feet of roof. A 2400 square foot two-story house would occupy an area 30 x 40 feet, have a foundation length of 140 feet and only require a minimum of 1300 square feet of roof.

Basic Home Styles

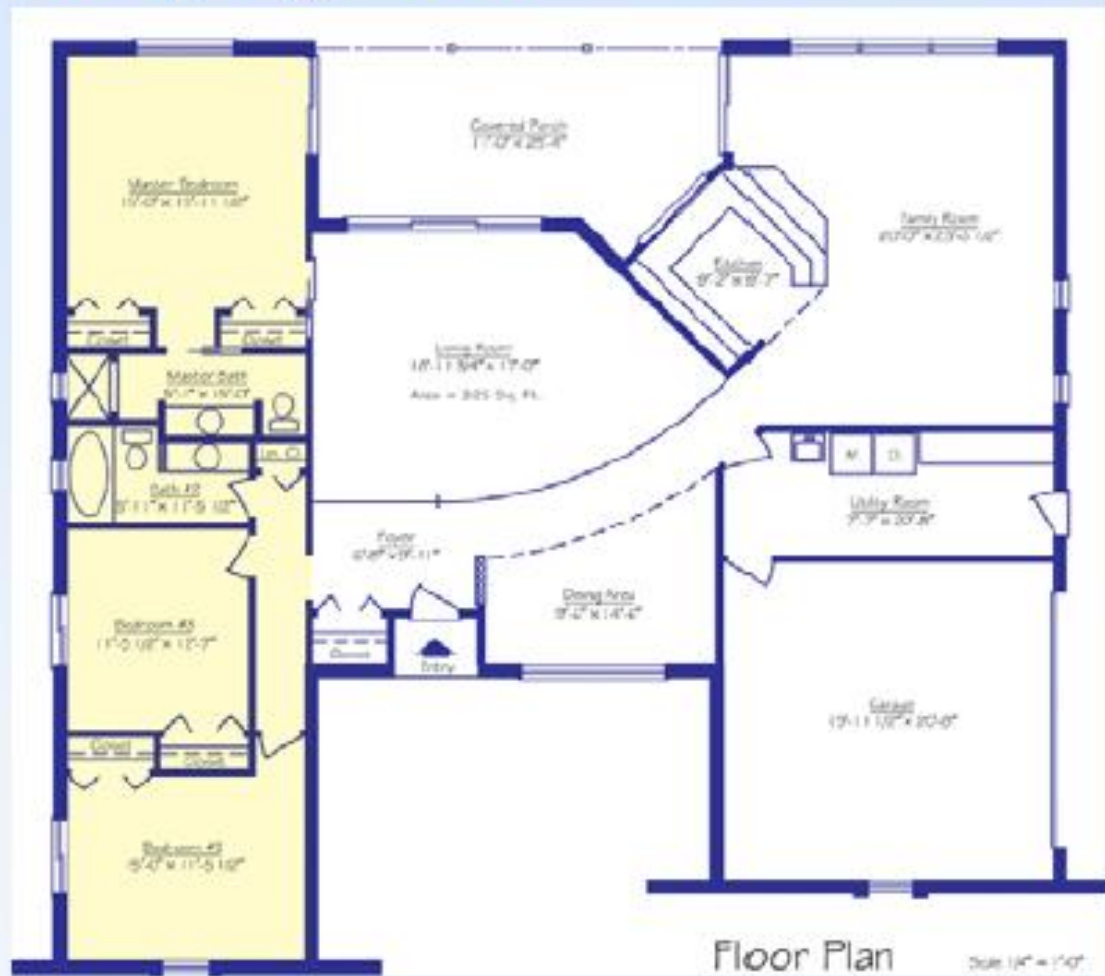


One-and-one-half story house is also known as the “Cape Cod”. It is basically a one-story home with a steeper roof allowing expansion of the attic. Dormers are often added to provide additional light and/or ventilation.

Generally bedrooms and a bath occupy this upper level. Since any space with less than 5-feet of head space is considered unusable, the total square footage of useable space in the attic is about one-half that of the first floor. The split level makes efficient use of space. The general arrangement of the split-level separates sleeping, living, and recreation on different levels of the house. Little or no hall space is required in split level house due to its basic design.

On the basement level you would see the mechanical equipment and possibly the recreation room, possibly a bedroom. On the intermediate level is the living area, and on the upper level is the sleeping and bath area of the home. A variation of this plan is the have four levels.

Sleeping Area



One third of the home is generally dedicated to the sleeping area of the house. This area includes bedrooms, bath, dressing rooms, and nurseries.

The number of bedrooms is usually determined by the size of the family and houses are often categorized by number of bedrooms that they have. In the case of a couple with no children, at least two bedrooms are desirable.

The second bedroom could be used as a guest room and for other activities when there are no guests. A home with a single bedroom may be hard to sell. Grouping the bedrooms together on one end of the house affords solitude and privacy.

In many cases the master bedroom may be located away from the other bedrooms to offer additional privacy for the owners.

Bedrooms



One of the first problems in design a bedroom is determining its size. How large is a “big” bedroom, how little is a “small” bedroom? The FHA recommends 100 square feet as the minimum size. A bedroom 9’ x 11’ has 99 square feet and will only hold the bare essentials of furniture.

An average size room is between 125 and 175 square feet. Such a room provides ample room for a double or twin beds, chest of drawers, dresser, and other small pieces of furniture. A large bedroom has over 175 square feet that allows for a desk, chair or television. The largest bedroom in the house is usually considered the “master” bedroom. Such a bedroom may have its own bath.

It is necessary for each bedroom to have a closet. The FHS recommends 4-linear feet of closet for a man and 6-linear feet for a woman. The minimum depth is 24-inches, but 30-inches is preferred. Closets should be located on interior walls, so as not to restrict ventilation and serve as a sound buffer between other rooms. Access to the closet should receive serious consideration.

Marble Bathroom



Small drab bathrooms for just a few years ago are items of the past. Modern homes have larger, more pleasant and functional baths. Today's homes have more baths than in the past. Most with at least 1 ½ or more. Ideally, each bedroom should have its own bath. One-and-a-half and two-story homes require a bath on each level of the home. A ½-bath or powder room may only be required on the level without sleeping areas.

Living Area

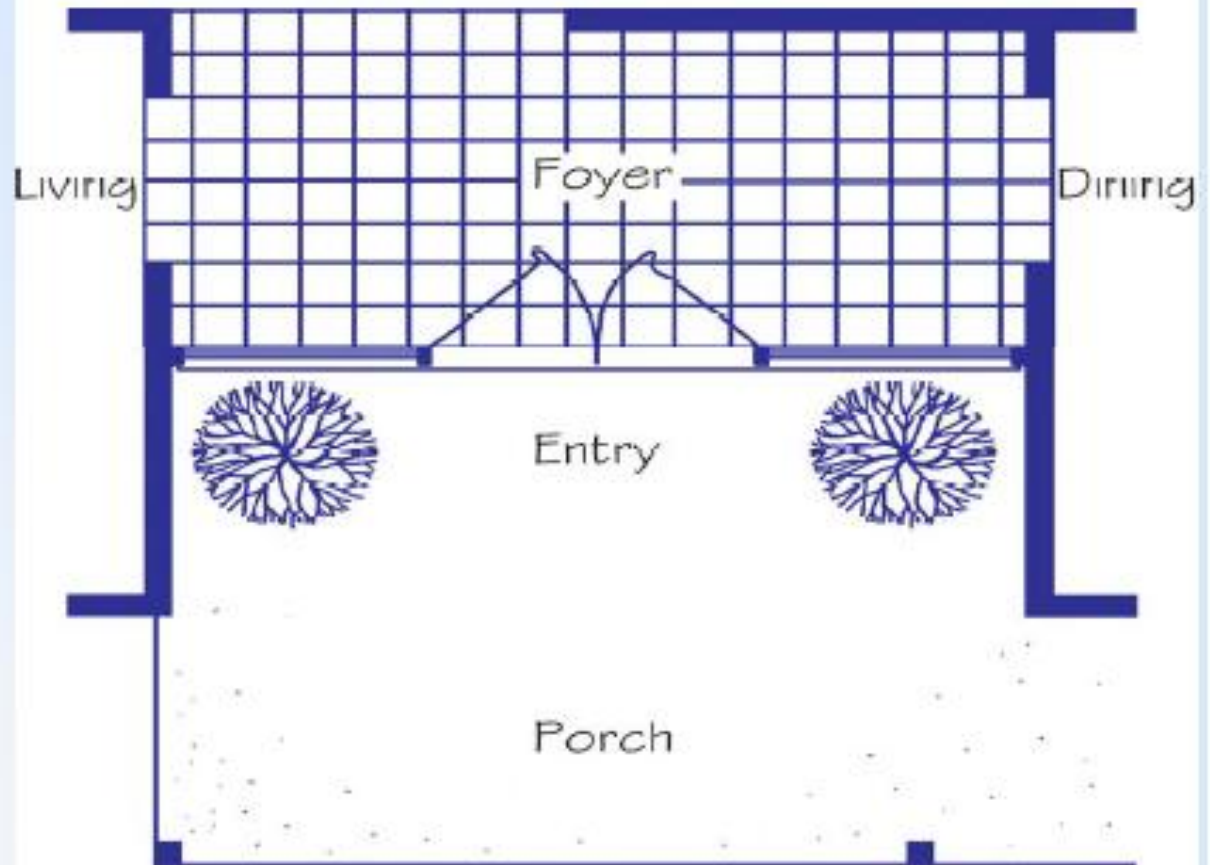


The living area is the part of the house that most friends and guests see. This is the area that usually becomes the showplace. Comprising approximately one third of the house, this area serves a variety of functions. It is the location for family get-togethers and dining. It is the area for recreation, entertaining, and just relaxing.

The living area is composed of a number of rooms. They include the living room, dining room, foyer, recreation or family room and special-purpose rooms such as a sunroom or home office. Some of the “rooms” may not be rooms in the true sense; however, they serve the same purpose. Modern trends are moving away from many rooms toward a more open plan with fewer walls and doors.

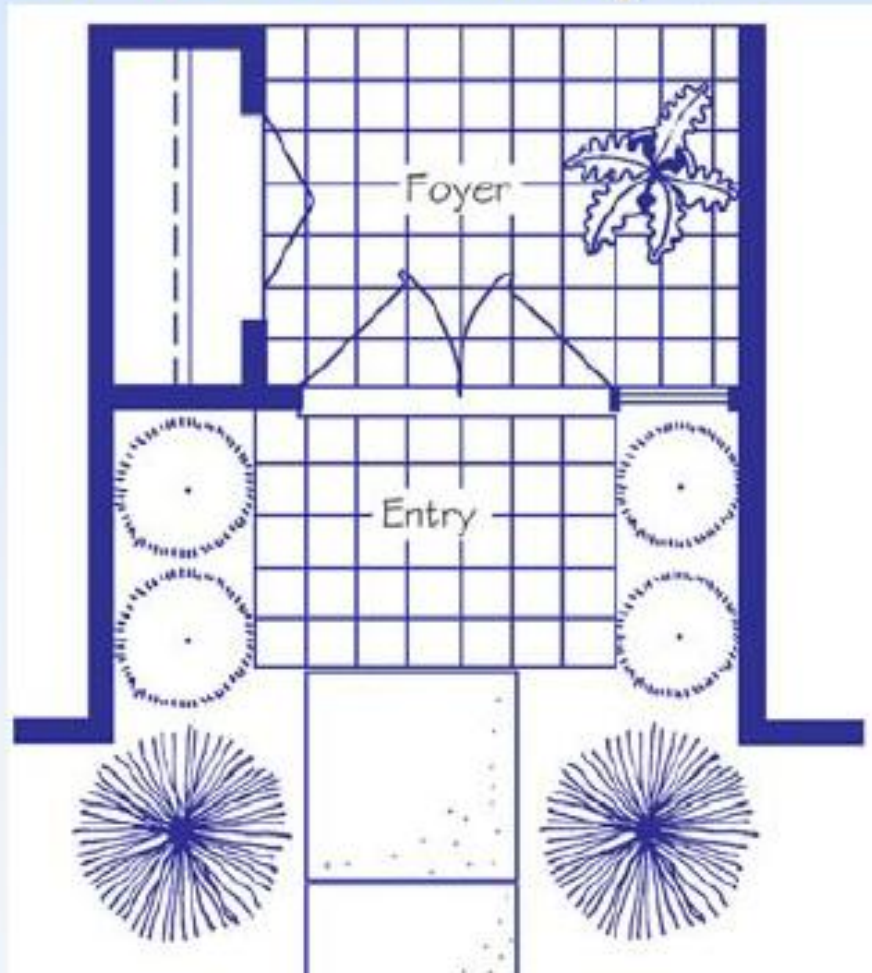
Every home has at least one entry, not all will have a foyer. A well-planned home will have both. The main entry should be impressive as it is the first thing that guests will see when they arrive.

Residential Entry



To be attractive it does not have to be large. The main entry should be centrally located to provide easy access to various parts of the house. An entry opening into a foyer is generally preferable to an entry opening directly into the living room. The size of the entry is dependent on the size of the house. It should be large enough to accommodate several people at any given time.

Residential Entry



Condo Living Room



The living room, for many families, is the center of activity. Depending on the specific occasion, it may be a play room for the children, a TV room, or a conversation place. Its size and arrangement will depend on the lifestyle of the members of the family. A designer should not place the room where it becomes a oversized hall between other parts of the house.

Dining and entertaining are usually closely related; therefore, the living room should be located near the dining room. In some areas these rooms may be combined to serve a dual purpose.

Classic Dining Room



Dining Room w/ Chandelier



Many modern homes include an informal place in the kitchen for eating as well as a more formal separate room for entertaining. The size of the dining room is dependent on the number of people who will be using the facility at one time. The location of the dining room should be carefully thought out. To be efficient, it should be located near the kitchen and the living room.

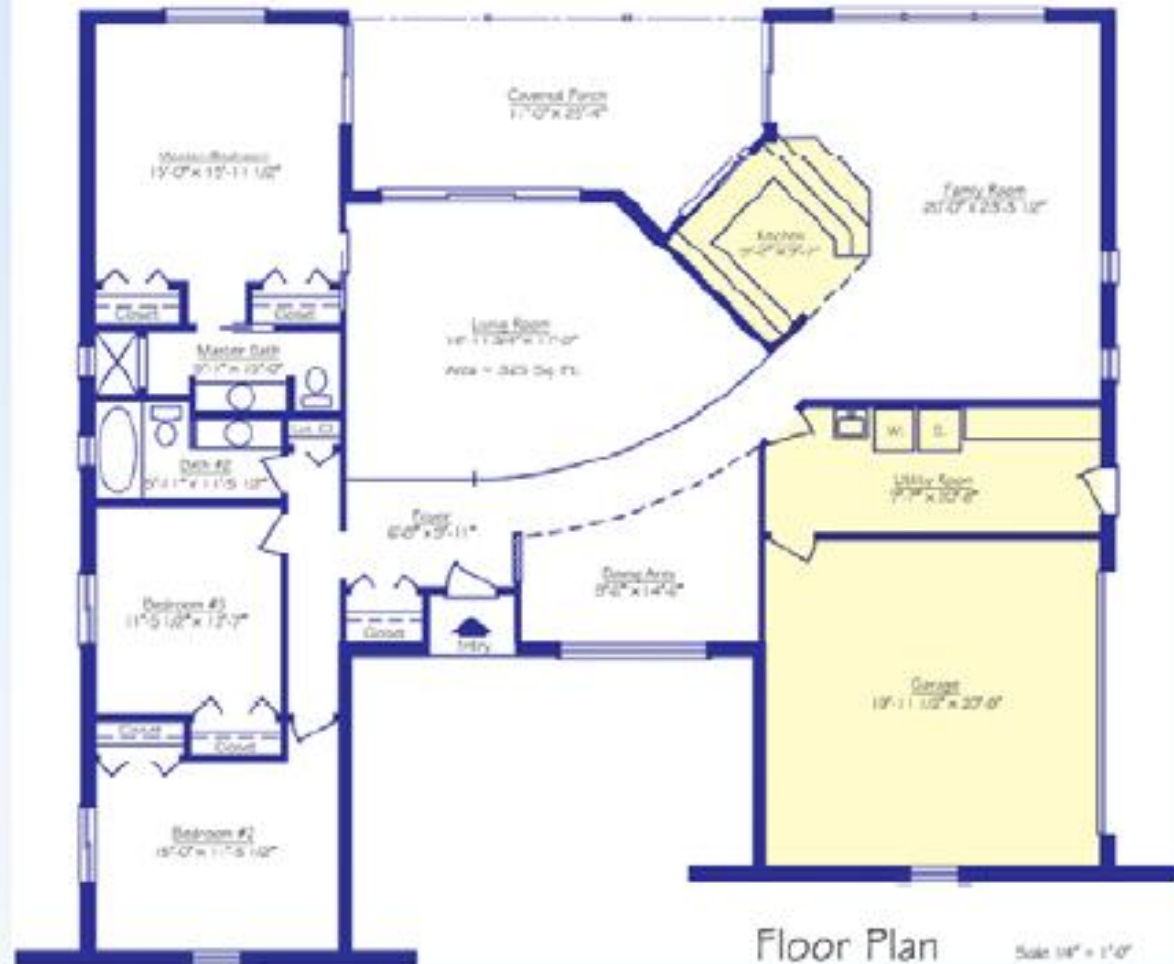
Pool and Screened Enclosure



A well-designed house will extend its living facilities beyond its walls. The use of patios, porches, and courts effectively enlarges the area and function of a house. In most localities, outdoor living is popular and should be planned for.

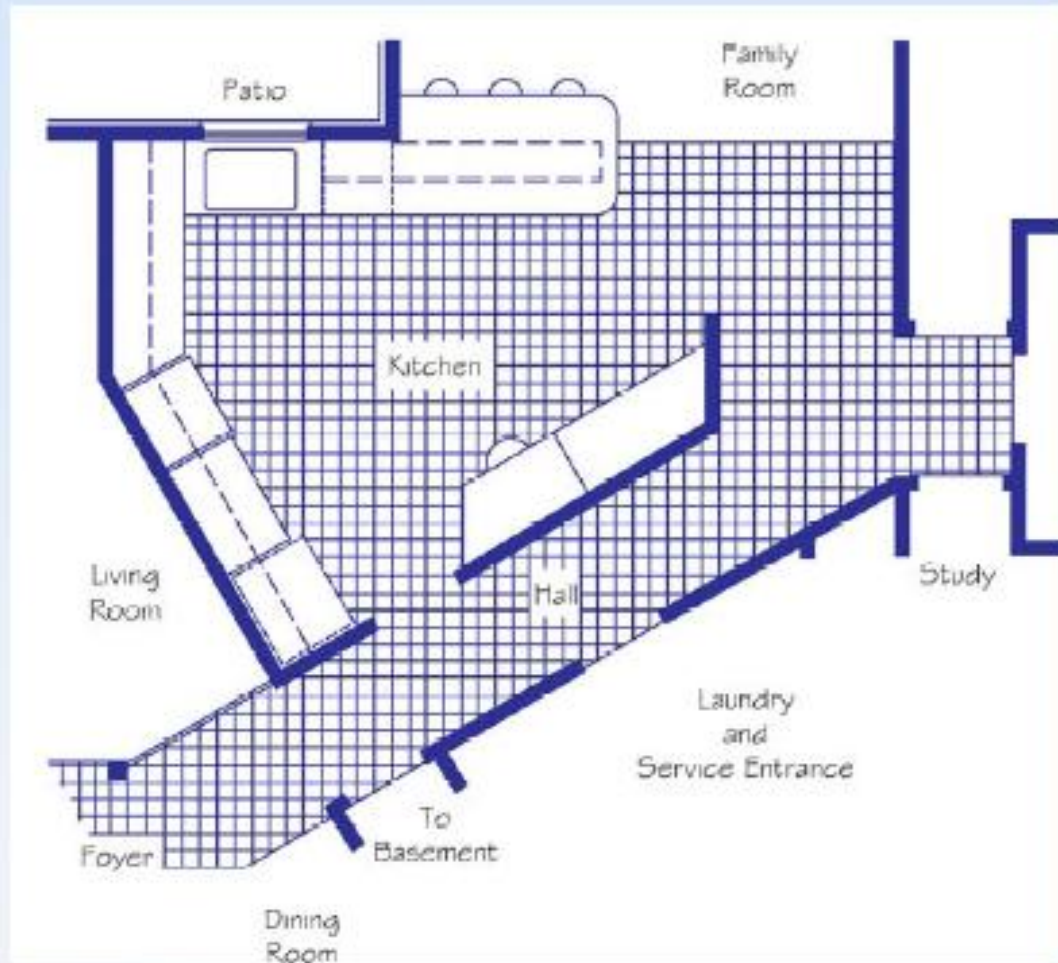
The service area supplements the Living and Sleeping areas of the house. It supplies equipment and space for maintenance, storage and service. It includes the kitchen, clothes care center, garage or carport, utility, and storage. Due to its varied functions, the service area will require careful planning.

Service Area



The principal use for the kitchen is food preparation. It may be enlarged or extended to include dining, laundry, and storage.

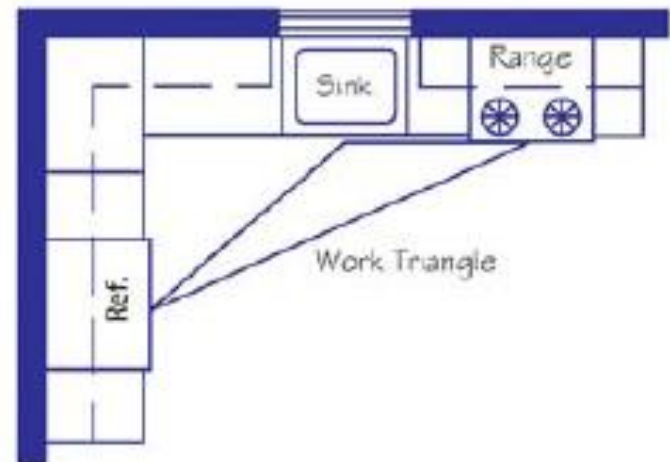
Complex Kitchen Layout



Kitchen Designs



Straight Line Kitchen



L-Shaped Kitchen

Kitchen designs

Poor planning will lead to inefficiency and added costs. From the standpoint of cost, the kitchen is usually the most expensive room in the house per square foot.

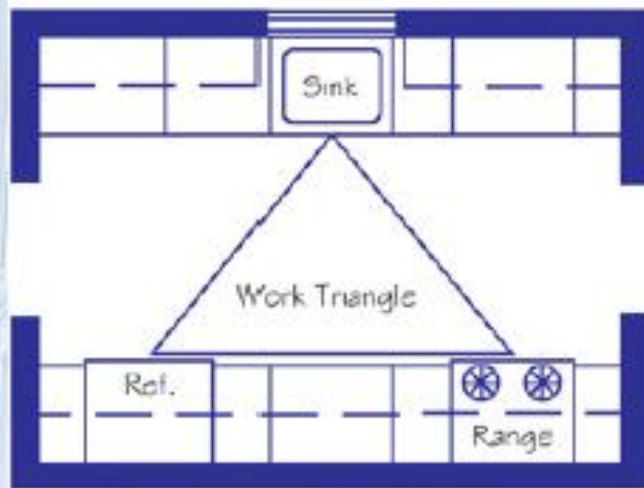
The kitchen is also the most used room in the house.

The straight line kitchen is most often found in apartments and cottages. It is an efficient plan, but has the disadvantages of limited cabinet space and is generally not interesting.

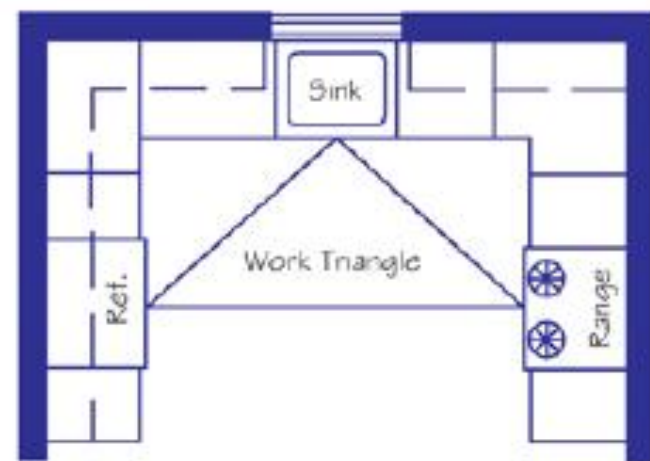
The straight line kitchen is seldom used in modern homes.

The L-shaped kitchen is located along two adjacent walls. The design is efficient and usually more attractive than a straight line kitchen.

Kitchen Designs



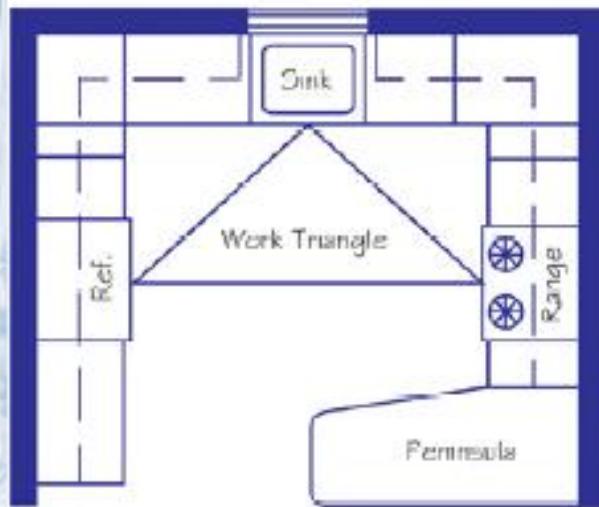
Corridor Kitchen



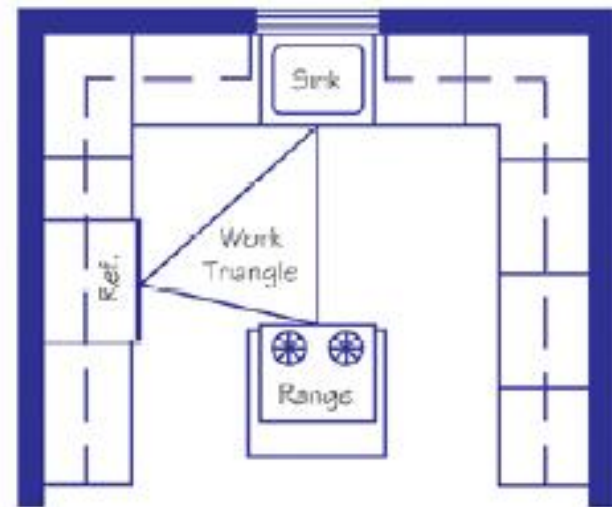
U-Shaped Kitchen

The corridor kitchen is sometimes referred to as a galley kitchen and are usually small. This arrangement is not recommended if traffic is to be heavy though the kitchen. The space between the cabinets should be at least 4-feet. Perhaps the most popular kitchen design is the U-shaped kitchen. It is an efficient plan that is very attractive. There is no traffic through the kitchen to other areas of the house.

Kitchen Designs



Peninsula Kitchen



Island Kitchen

The peninsula kitchen is popular because it provides plenty of work space and easily joined to the dining room using the peninsula as a divider. The island kitchen may be a modification of the straight line, the L-shaped or the U-shaped design. The island may house the sink, cooking center, it may serve as a counterop of snack bar. The island should be accessible on all sides.

Modern Kitchen cabinets provide the majority of storage space in most kitchens. They are produced in standard sizes, but may be custom made in other sizes.

Modern Kitchen



Outdoor or patio cook centers are becoming very popular in moderate temperature locals. Many include a cook top/barbeque and cold storage, some have refrigerators and even ice makers and wood burning pizza ovens.

Patio Cookout Center



The background of the slide features a light blue gradient with a faint, semi-transparent image of classical architectural columns on the left side. The columns are white with detailed capitals and fluted shafts. The entire slide is framed by a thin brown border.

References

- 1. Architecture of House, www.behtek.com**
- 2. Dr. Raymond Maturan, PIT**

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Questions?