Some Considerations for Good Home Design

Kitchen design: The *Work Triangle*

The kitchen work triangle principle is used by kitchen designers and architects when designing residential kitchens. The triangle is made up of imaginary lines connecting the fridge, stove, and sink:

- No leg of the triangle should be less than 4 feet (1.2 m) or more than 9 feet (2.7 m).
- The sum of all three sides of the triangle should be between 13 feet (4.0 m) and 26 feet (7.9 m).
- Cabinets or other obstacles should not intersect any leg of the triangle by more than 12 inches (30 cm).
- If possible, there should be no major traffic flow through the triangle.
- A full-height obstacle, such as a tall cabinet, should not come between any two points of the triangle.

Besides the work triangle itself, there are several rules of thumb to consider when planning a kitchen:

- As measured between countertops and cabinets or appliances, work aisles should be no less than 42 inches (110 cm) for one cook, or 48 inches (120 cm) for multiple cooks.
- A sink should have a clear counter area of at least 24 inches (61 cm) on one side, and at least 18 inches (46 cm) on the other side.
- A refrigerator should have a clear counter area of at least 15 inches (38 cm) on the handle side; or the same on either side of a side-by-side refrigerator; or the same area on a counter no more than 48 inches (120 cm) across from the refrigerator.
- A stove or cooktop should have a clear 15 inches (38 cm) area on one side, and at least 12 inches (30 cm) on the other side.
- At least 36 inches (91 cm) of food preparation area should be located next to the sink.
- In a seating area where no traffic passes behind the diner, allow 32 inches (81 cm) from the wall to the edge of the table or counter; if traffic passes behind the diner, allow 44 inches (110 cm).

***** Please Remember: these are only guidelines. Sometimes it may not be possible to allow for all these guidelines in a given space. It is the job of the designer to ensure that the space is fully functional by applying these guidelines wherever possible. Good design can not be created by following a list of rules*****

Stair design (For Level 2)

- Calculate total height between floors (ceiling height + joist height + floor) and divide number by 7.5 to get number of steps in staircase.
    - Example: 96" ceiling + 12" joists + ¾" flooring = 108.75"
- Always round the number of steps up.
    - 108.75/7.5 = 14.5 steps.
- 14.5 = 15 steps or rises: 108.75"/15 rises = 7.25" height per step.
    - For this example, the staircase would be 15 steps of 7.25" high each rise. For this project, use a length, or run, of 11" for each step.

Bedroom design:

Generally bedrooms are around 150 sq. ft. Master bedroom often may be closer to 300 sq. ft. Also consider where the storage is. Is there space for a dresser? Or have you included a closet?

Bathroom Design:

It is important to consider the number of people expected to live in a space when deciding how many bathrooms to include. Think about your home: How many people live there? How many bathrooms are there? Is it enough? Also consider this: does every bathroom have to have the same fixtures? It may be enough to have one bathroom with a toilet, sink, and shower, and one bathroom with just a toilet and sink.

To see examples of bedroom and bathroom layouts and more standards for design consideration check the textbook: "Architectural Graphic Standards" or "Architecture: Residential Drafting and Design" at the front of the room.