

# BUILDING CONSTRUCTION

- ***Building:*** Any structure constructed of whatsoever material and used for residential ,commercial , business or other purpose is called a building.
- **Classification of building:**
  - [1] Based on occupancy
  - [2] Based on types of construction
- **BASED ON OCCUPANCY:**
  - [1] Residential building
  - [2] Educational building
  - [3] Institutional building
  - [4] Assembly building
  - [5] Business building

[6] Mercantile building

[7] Industrial building

[8] Storage building

[9] Hazardous building

Classification based on type of construction:

[1] Building with 'Type1' construction

[2] Building with 'Type2' construction

[3] Building with 'Type3' construction

[4] Building with 'Type4' construction.

- *DIFFERENT PARTS OF BUILDING:*
- *[1]Sub structure*  
*[2] Super structures*
- ***[1] Sub structure:*** *The part of a building below the ground level is called sub structure.*
- ***[2]Super structure:*** *The part of building above the ground level is called super structure example wall, roof, floor, verandah ,doors and window.*

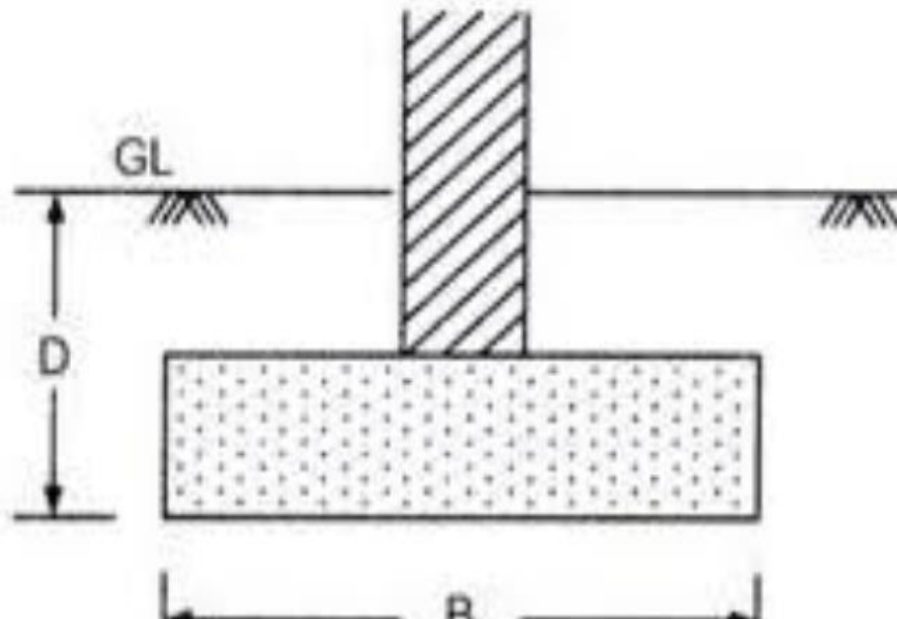
# FOUNDATION

- ***Foundation:*** The lowest artificially built part of a structure which transmits the load of the structure to the soil lying underneath is called foundation.

The foundation of the structure is always constructed below the ground level so as to increase the lateral stability of the structure.

- ***Types of foundation*** : The following two types of foundation :
  - [1] Shallow foundation
  - [2] Deep foundation

- 1. *Shallow foundation:*** The foundation provided immediately beneath the lowest part of the structure near to the ground level are known as shallow foundation.



- Shallow foundations are further classified into the following types:
- [1] Spread footing
- [2] Grillage foundation
- [3] Raft foundation
- [4] Stepped foundation
- [5] Inverted arch foundations.

**2. *Deep foundations:*** The foundation constructed sufficiently below ground level with some artificial arrangements such as piles, wells etc. at their base are called deep foundation.

- Deep foundation are further classified into the following types :
  - [1] Pile foundation
  - [2] Well foundation
  - [3] Caisson foundation

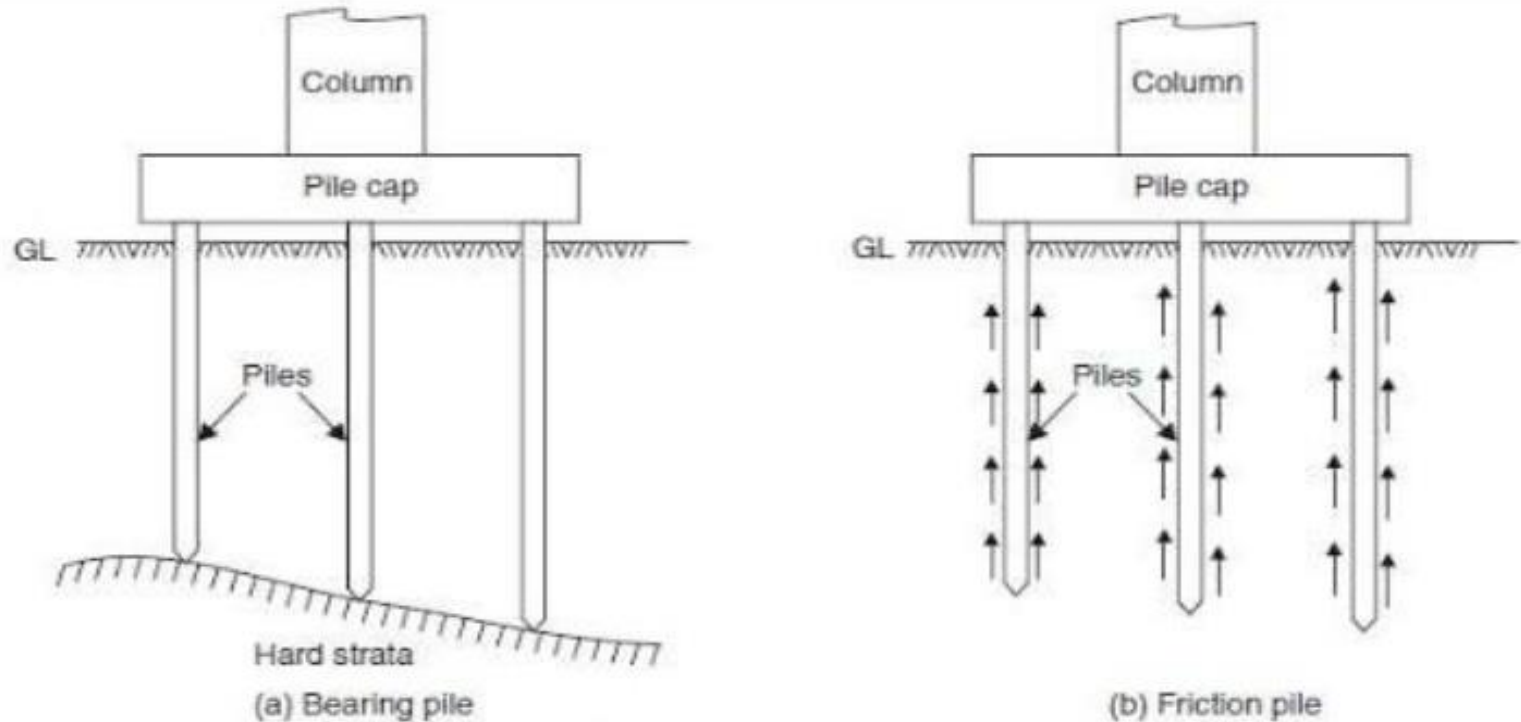
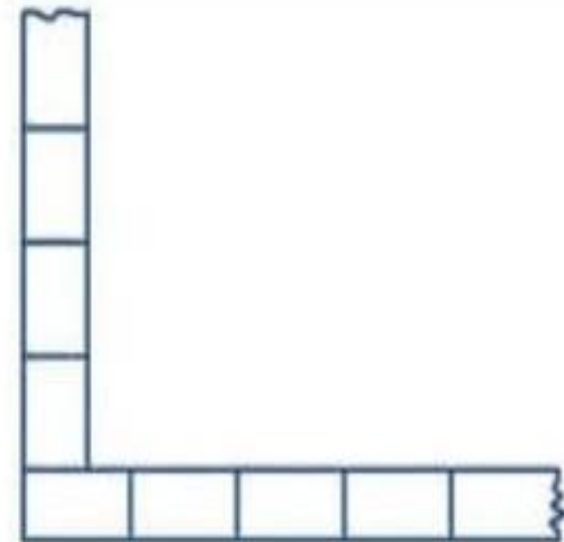
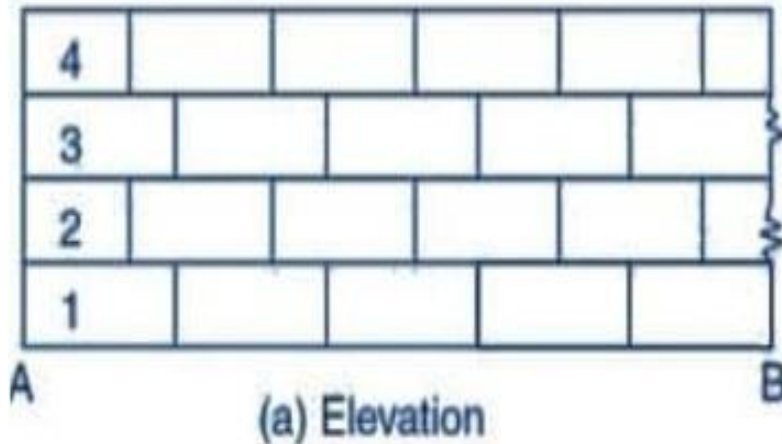


Fig. 7.9. Pile foundations



# BRICK MASONRY

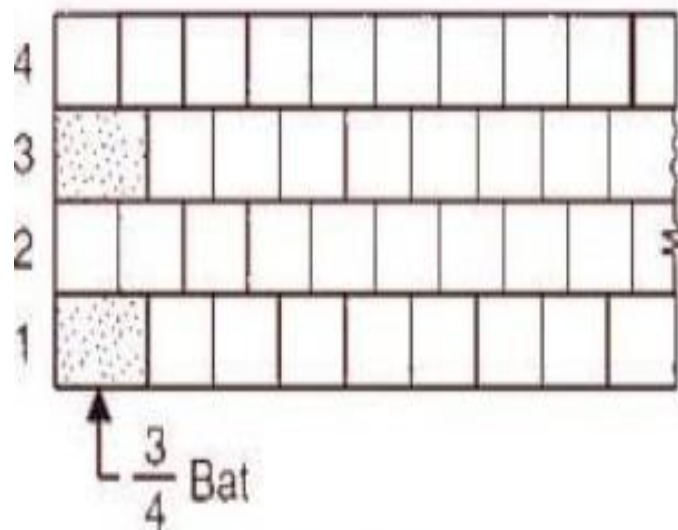
- **Brick masonry** : An assemblage of brick properly bounded together in mortar is called brick masonry .
  - **Technical terms** :
    1. **Stretcher** : a bricks when laid in bricks work with its side surface or length in elevation is called stretcher.
- 



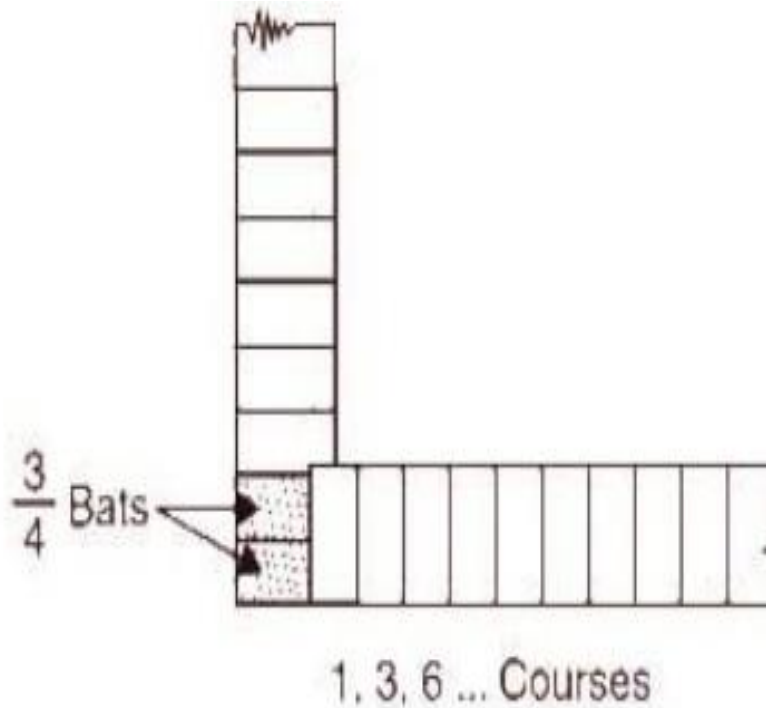
1, 3, 5 ... Courses

(b) Plan

**2. Header :** a bricks when laid in brickwork with its end surface or width in elevation is known as header .

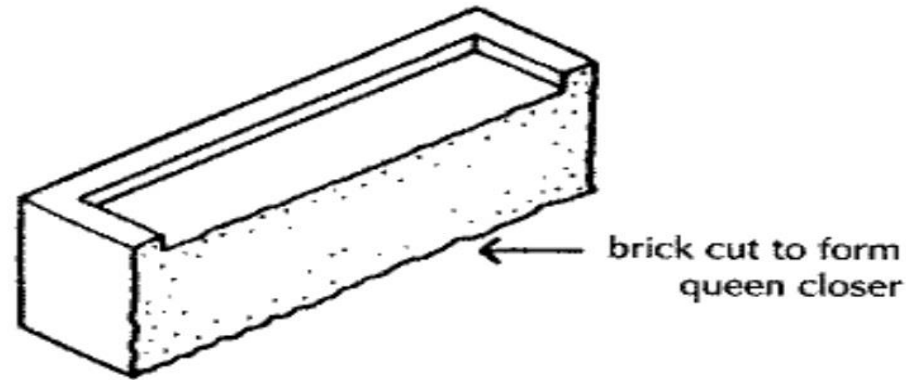


(a) Elevation

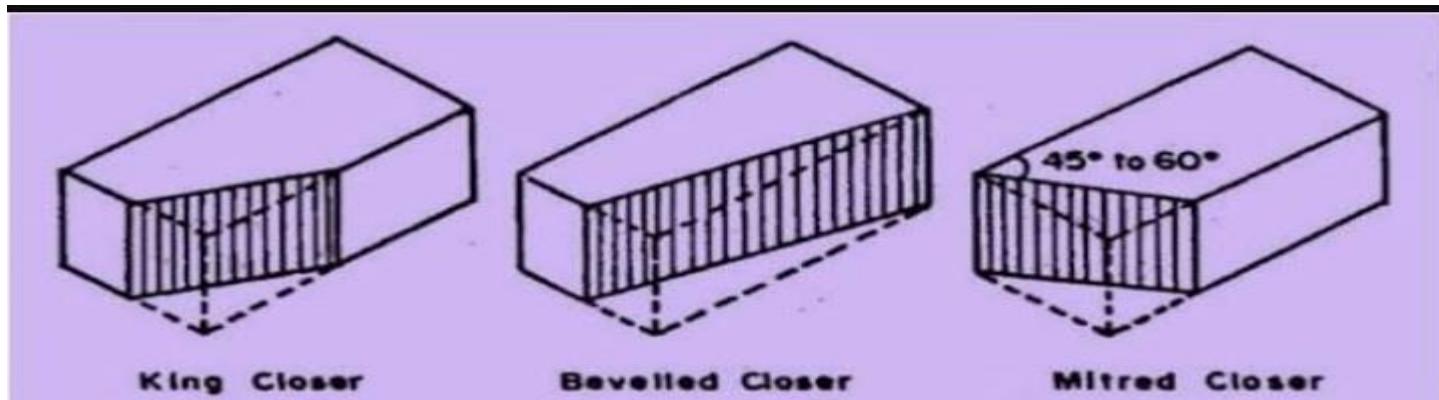


(b) Plan

**3. Queen closer :** the portion of a standard brick made by cutting it across the length into halves is termed as queen closer.



**4. King closer :** the portion of standard brick made by cutting off the triangular piece between the centre of one header face and the center of one stretcher face is called king closer .



- 5. Frog** : the depression provided in the face of a bricks during its manufacturing .
- 6. Course** : each horizontal layer of bricks laid in mortar in any brickwork .
- 7. Facing** : the exposed or external surface of a wall is call face.
- 8. Backing** : the un exposed or internal surface of a wall is called backing.
- 9. Hearting** : the interior portion between the facing and backing of a wall is called hearting .
- 10. Soffit** : the undersurface of an arch or lintel provided over a door , window or verandah opening is called soffit.
- 11. Plinth** : the portion of a structure between the surface of the surrounding ground and the surface of the floor immediately above the ground is known as plinth.

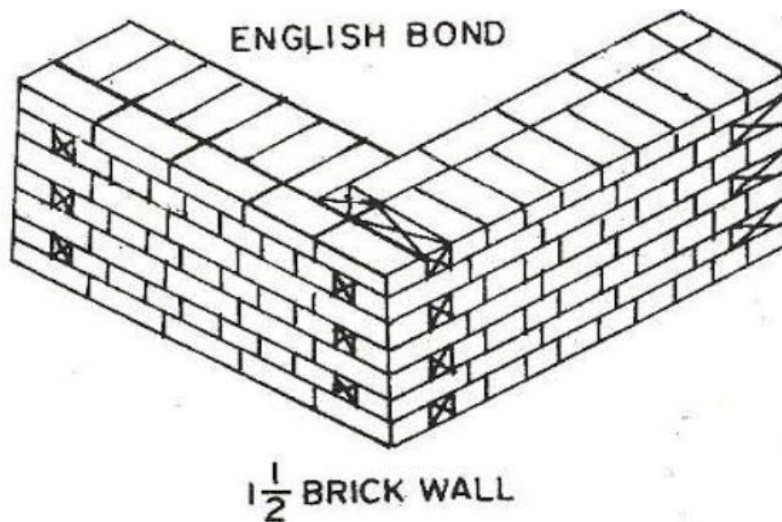
- **Bond** : the arrangement of brick or stone in each layer so as to avoid continuity of vertical joint in any two adjacent courses both on the face and inside of a masonry structure is called bond .

- **Types of bond** : the following are the different types of bonds used in brick work :

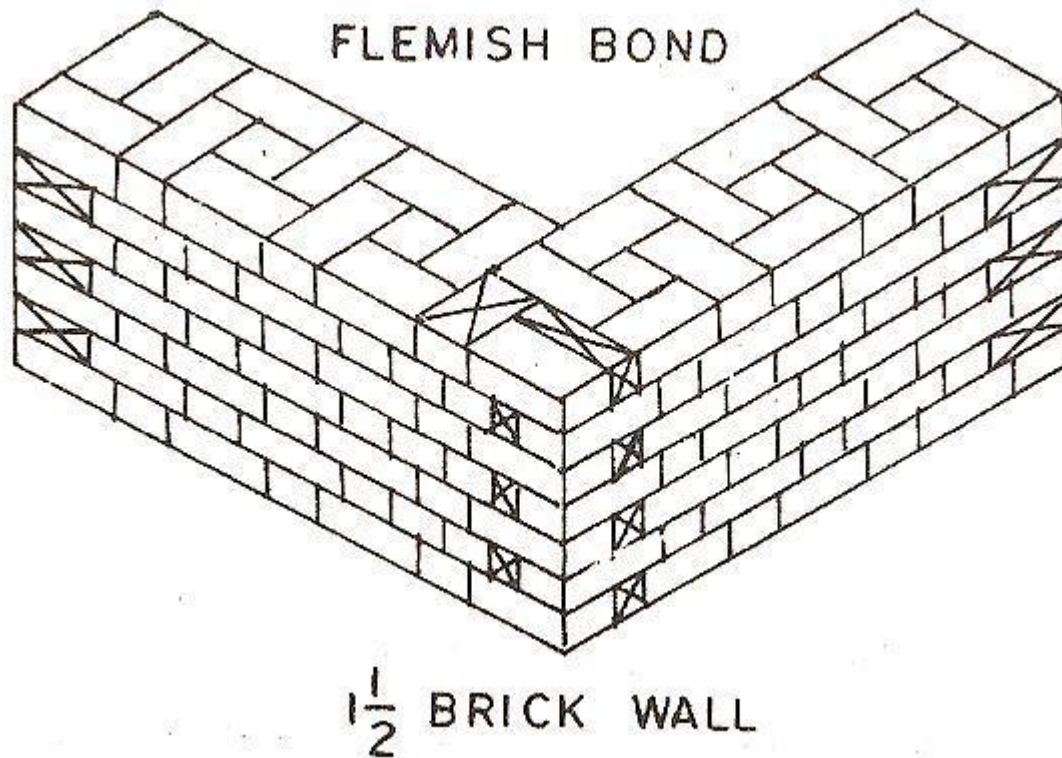
- [1] English bond

- [2] Flemish bond

**[1] English bond** : the bond having headers and stretcher laid in alternate courses is called English bond .



**[2] Flemish bond :** The bond having headers and stretcher laid alternately in the same courses is called Flemish bond.

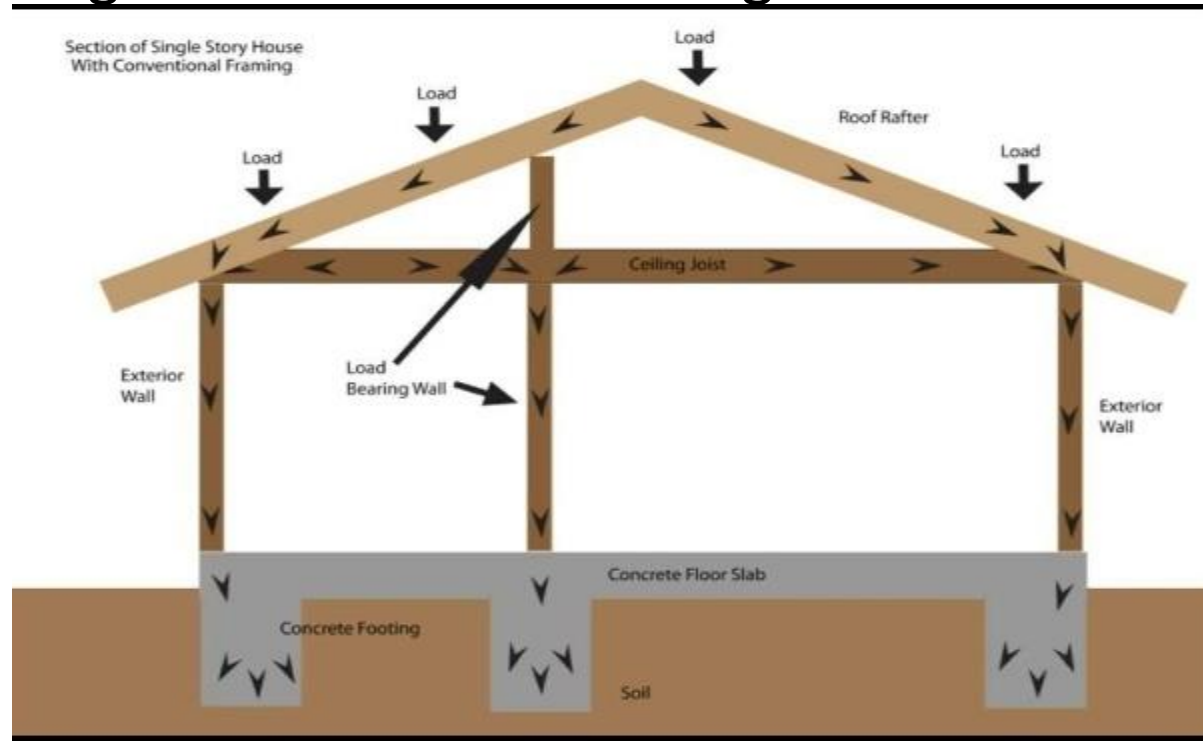


# WALLS

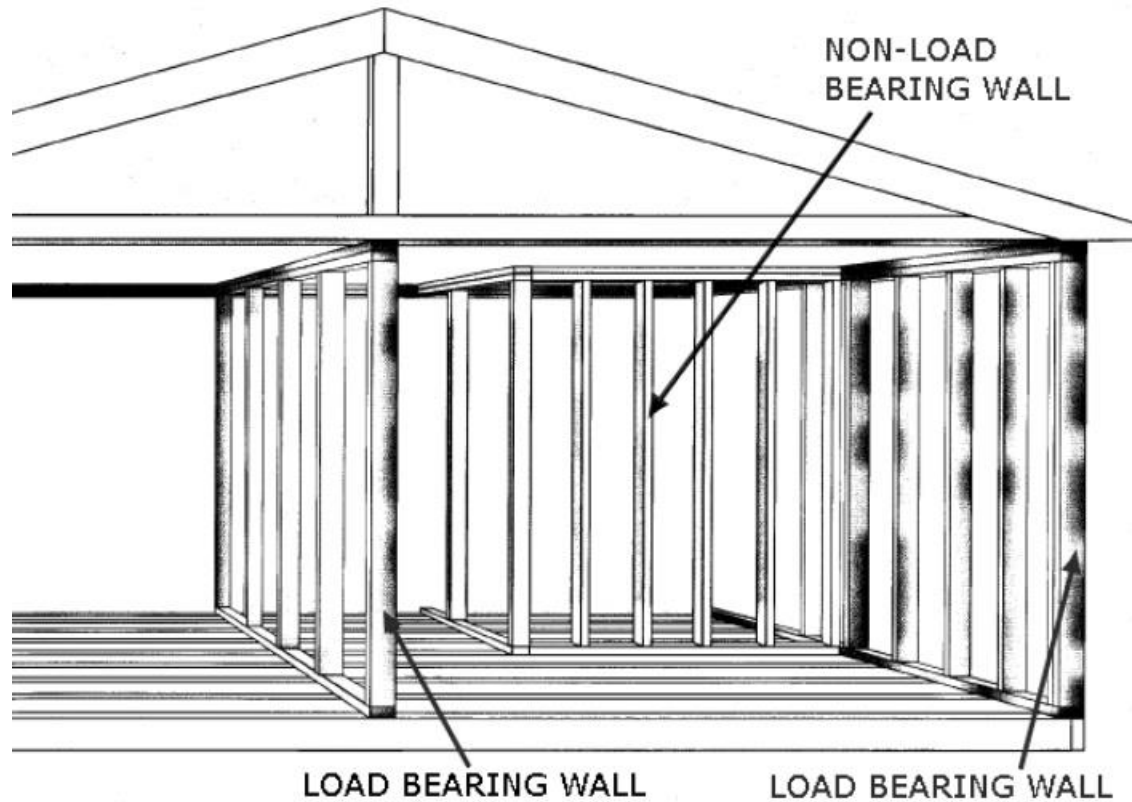
• **Walls** : The structure constructed to enclosed in area to support floor and roof or divide the floor area of a building into a required number of room are known as wall.

• **Classification of wall** :

1. **Load bearing wall** : The wall which support the floor or roof of a building are called load bearing wall.



**2. *Non Load bearing wall:*** The wall which do not support floor or roof of a building is called non load bearing wall.





- ***Partition walls*** : The wall which divide the floor area of a building into a number of room to provide privacy to inmates from sound and sight are called partition wall.



- ***Types of partition walls:***
- ***[1] Brick partition:*** The partition wall which consisting of brick work plain or reinforced are called brick partition.

Brick partition wall are further divided into two types :

[1] Plain brick partition

[2] Reinforced brick partition

- ***Wooden partition:*** The partition wall consisting of wood common or trussed are called wooden or timber partition .
- ***Cavity wall:*** The wall having their thickness constructed in to parts are parallel each other with a continuous air space between them are known as cavity or hollow wall .

- ***Scaffolding***: The temporary structure constructed to support a safe working platform for work man and material required during building operation is known as scaffold, and the method of its construction is called scaffolding .
- ***Types of scaffolding*** :
  - [1] Brick layer scaffolding
  - [2] Mason`s scaffolding
  - [3] Ladder scaffolding
  - [4] Cantilever or needle scaffolding
  - [5] Suspended scaffolding
  - [6] Steel or tubular scaffolding

- ***Shoring*** : The temporary support provided to an unsafe structure or to a structure under going alteration is called shore and the method of its construction is called shoring.
- ***Underpinning*** : The method of supporting a structure while strengthening its existing footing or while providing a new foundation below its existing foundation to take the increased load is called underpinning.