

STONE MASONRY

Rock, that is removed from its natural site and generally, cut or dressed and then finished for building purposes, is called "**Stone**" and the art of building the structure with stones as constructional units is called "**Stone Masonry**".

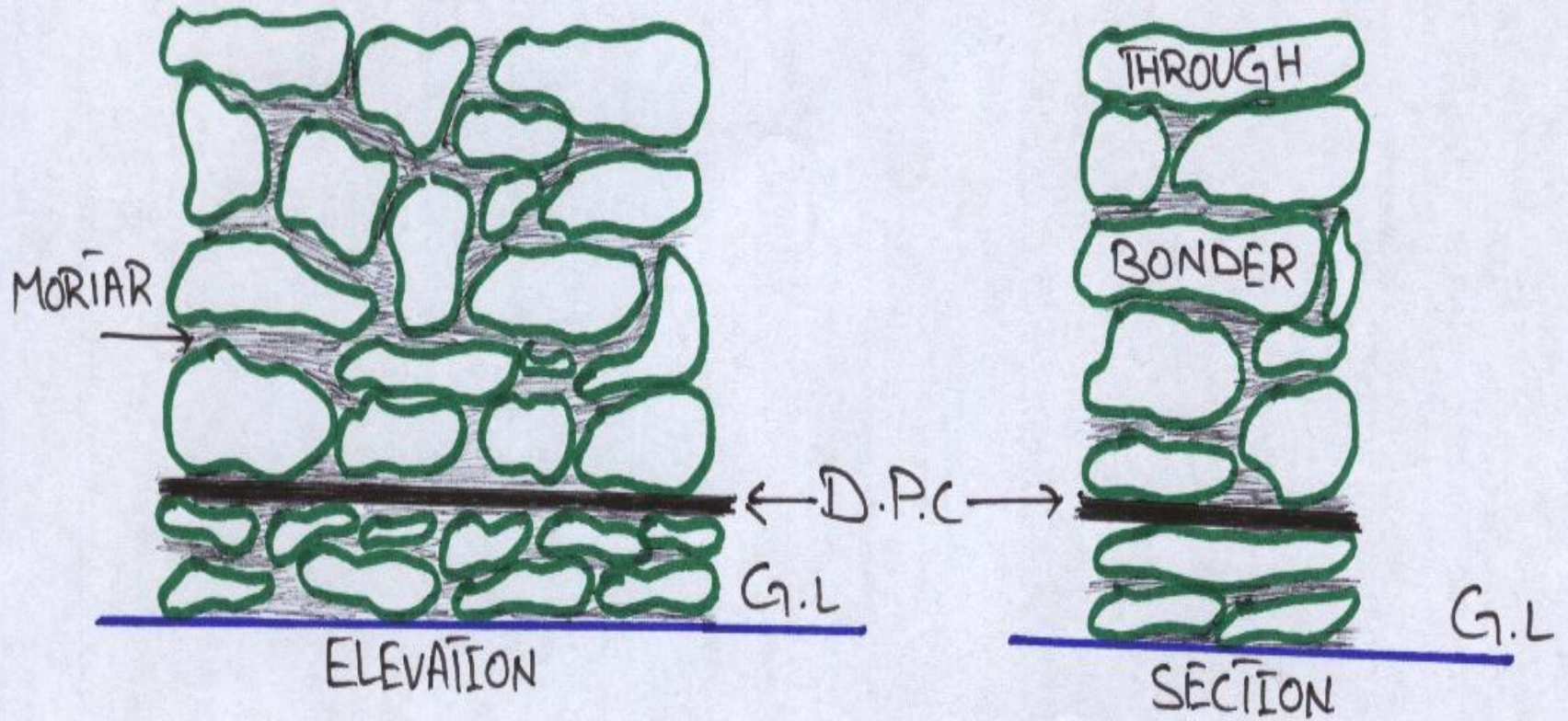
MAIN TYPES OF STONE MASONRY

(1) Rubble Masonry

(2) Ashlar Masonry

RUBBLE MASONRY

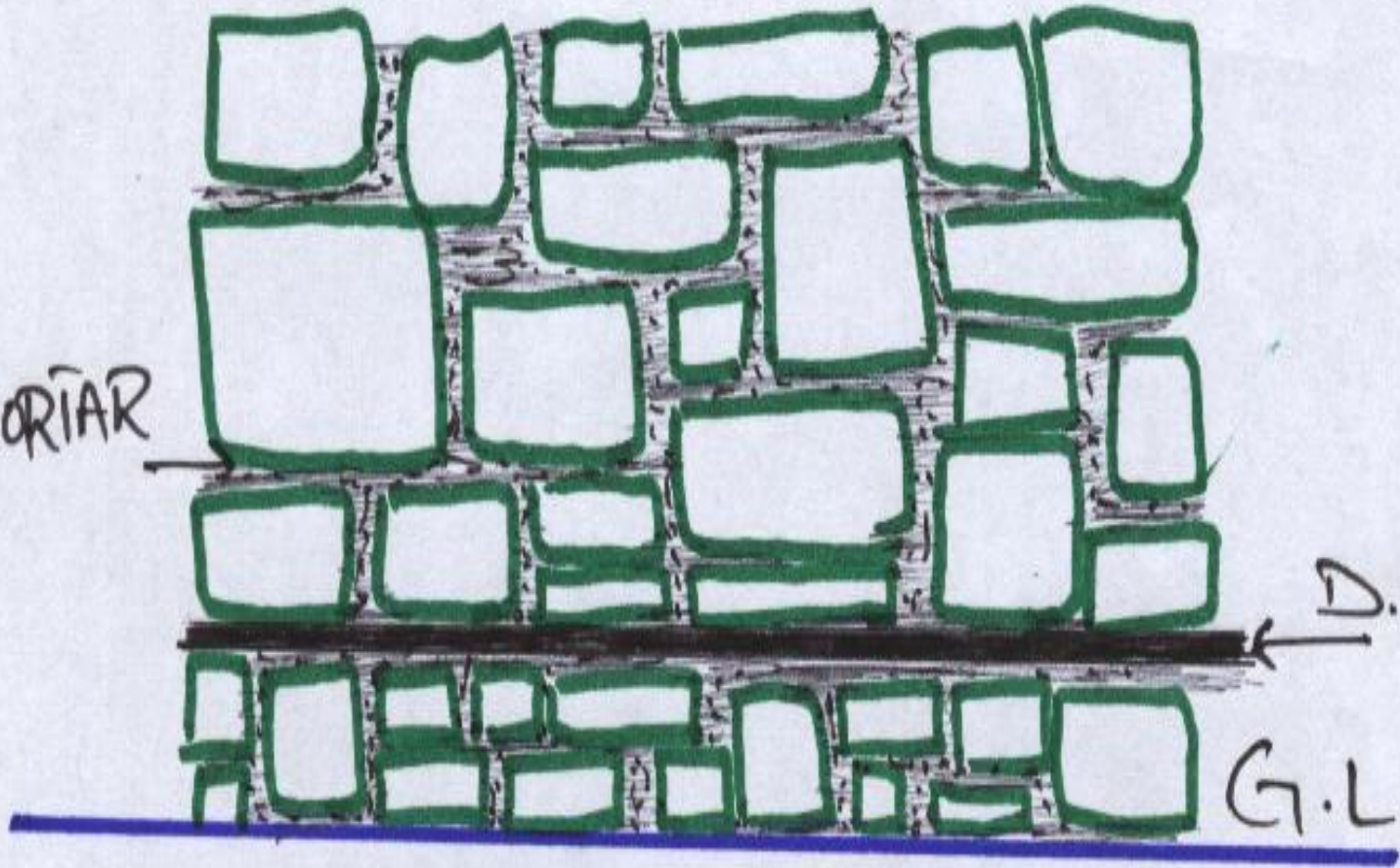
- The stone masonry in which either undressed or roughly dressed stones are laid is called "**Rubble masonry**".
- In this masonry, the joints of mortar are not of uniform thickness.



SQUARED RUBBLE MASONRY

- The Rubble masonry in which the face stones are roughly squared by hammer dressing or chisel dressing, before their actual laying is called "**Squared Rubble masonry**".
- There are three Types of squared rubble masonry:

MORTAR

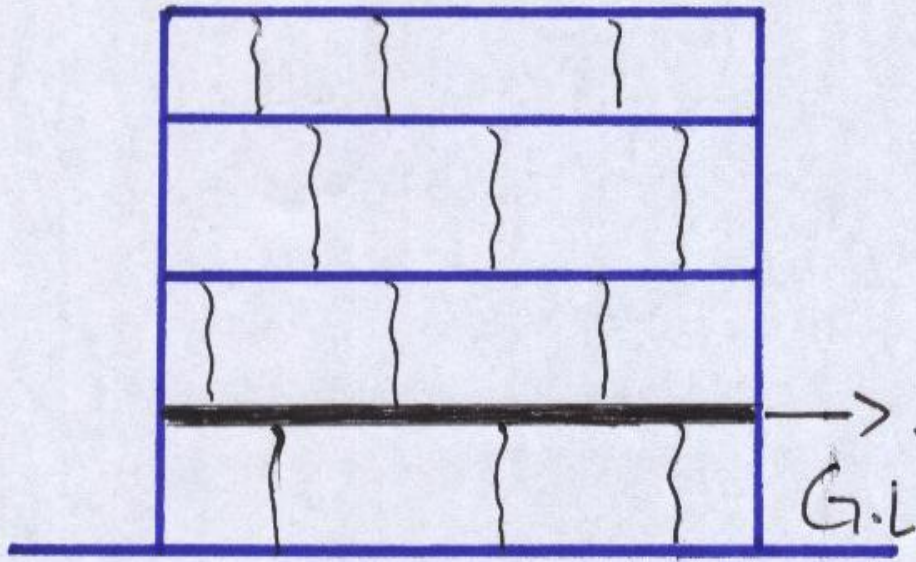


D.P.C

G.L

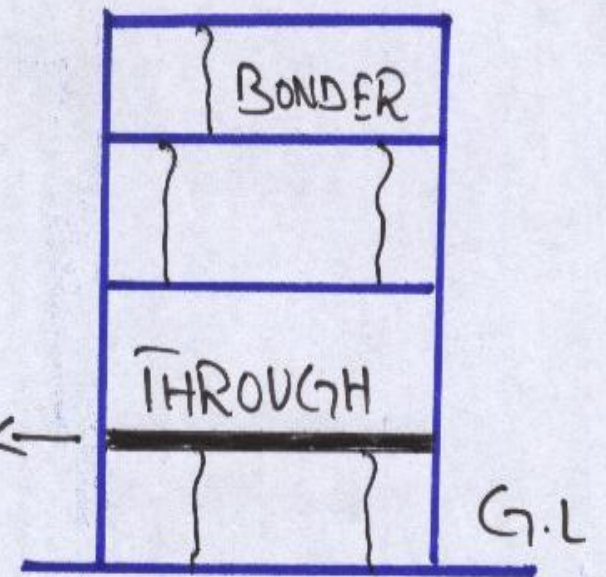
REGULAR COURSED SQUARED RUBBLE MASONRY

- It is mostly used in public buildings, hospitals, schools, markets, modern residential buildings and in hilly areas, where a good quality of stone is easily and cheaply available.



ELEVATION

D.P.C



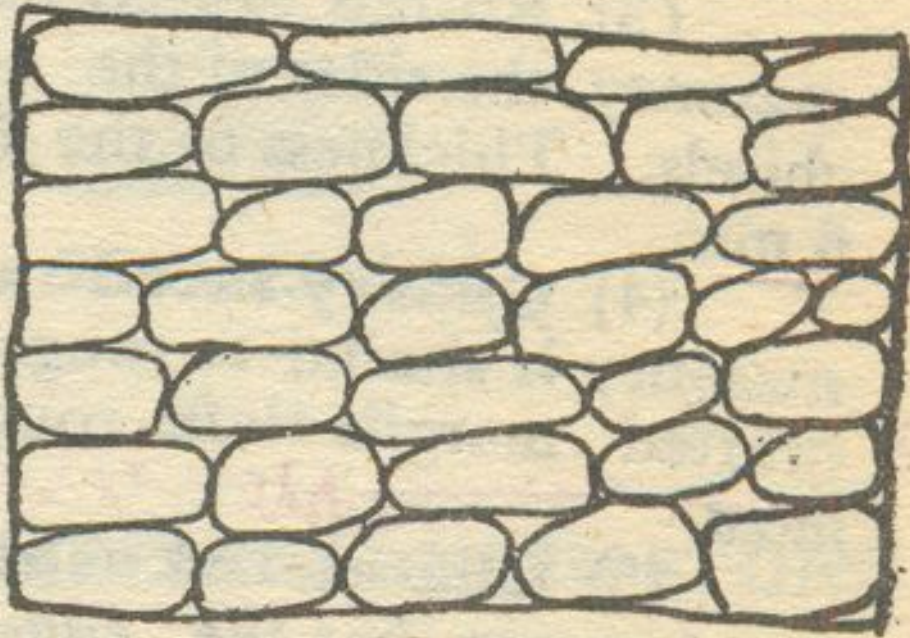
SECTION

BONDER

THROUGH

DRY RUBBLE MASONRY

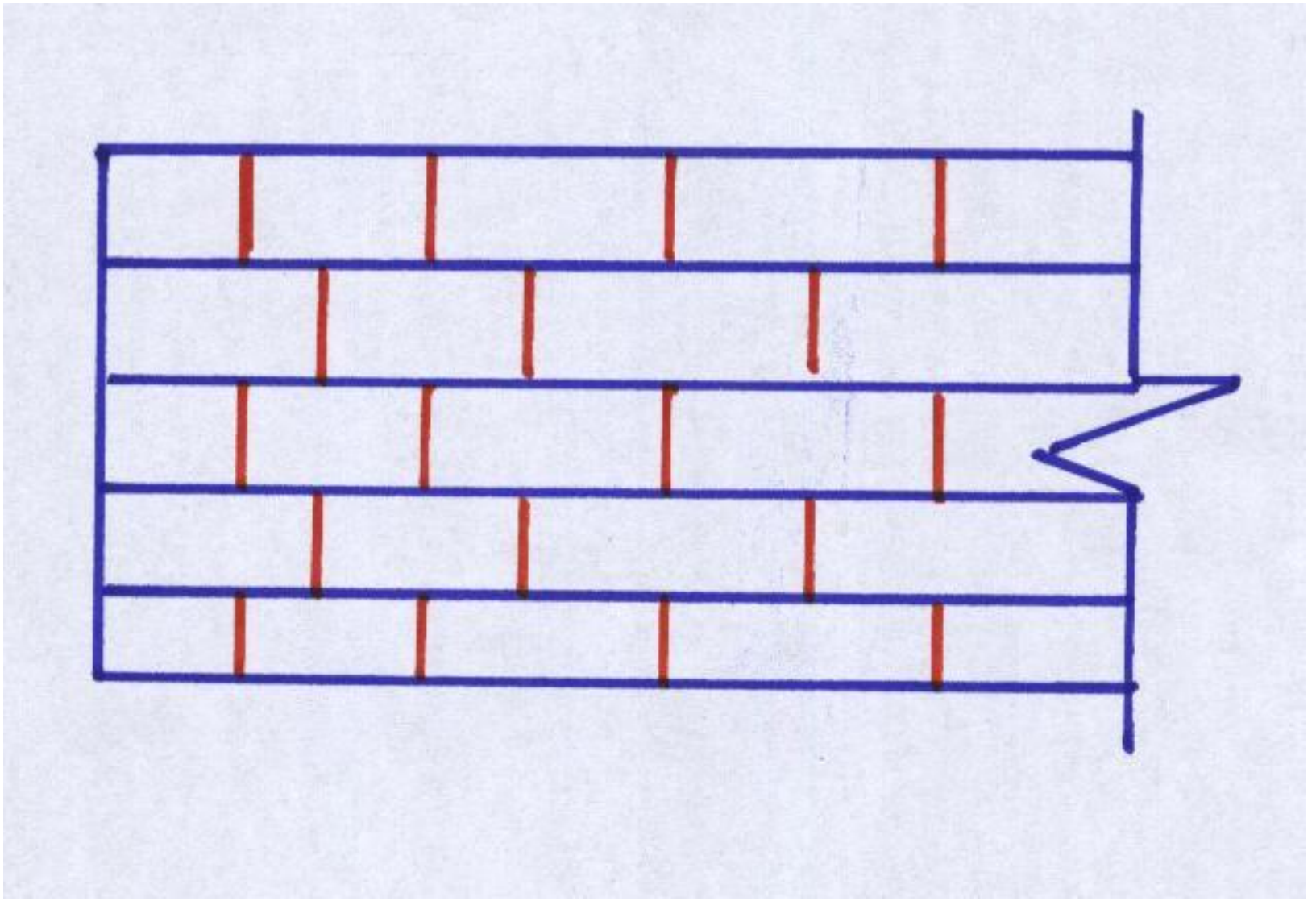
- The rubble masonry in which stones are laid without using any mortar is known as "**Dry Rubble Masonry**".



Dry Rubble
Masonry

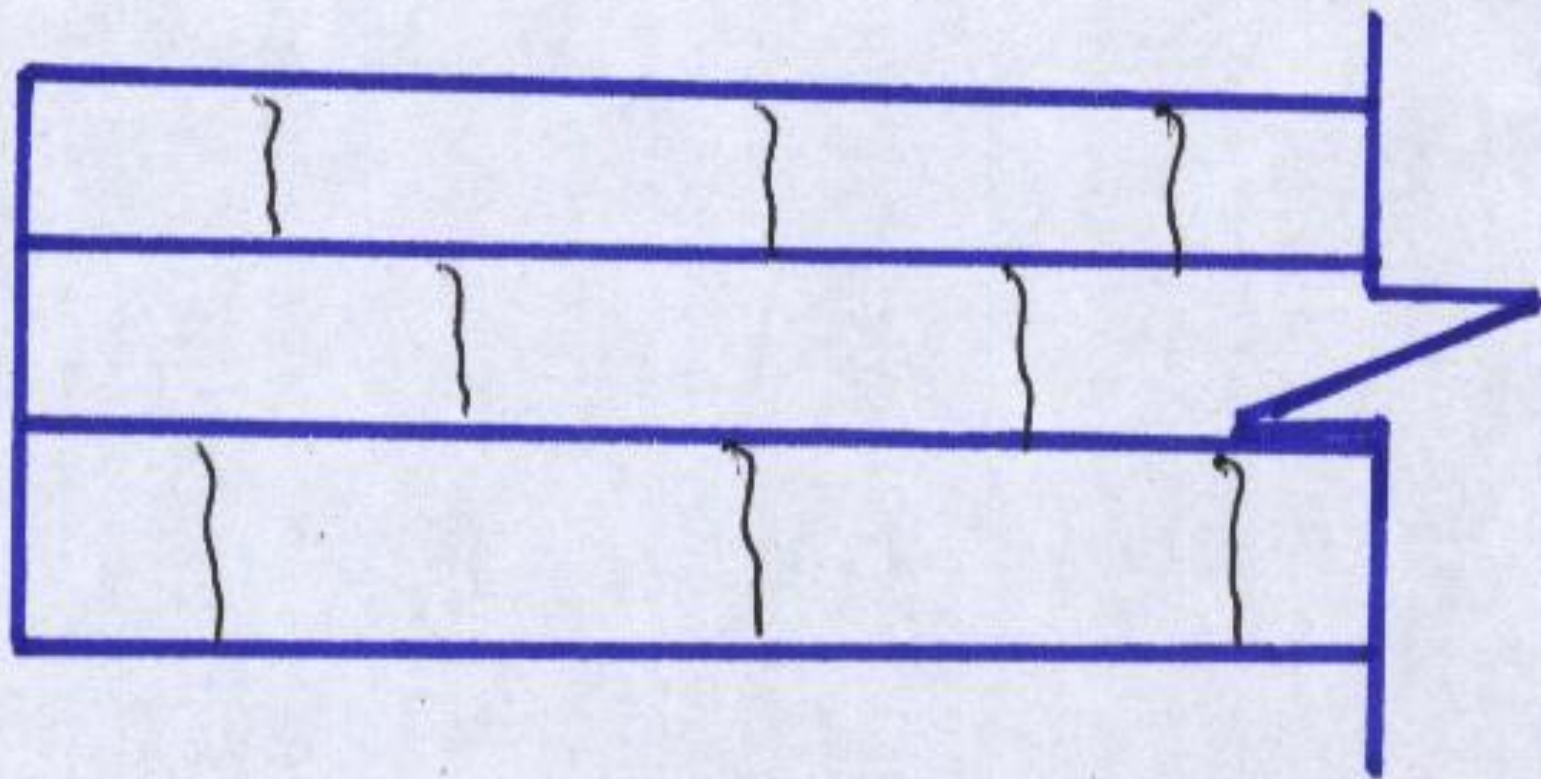
(2) ASHLAR MASONRY

- The stone masonry in which finely dressed stones are laid in cement or lime mortar, is known as "**Ashlar Masonry**".
- In this masonry all the joints are regular, thin, and of uniform thickness.
- This type of masonry is costly in construction as involves heavy cost of dressing of stones.
- This masonry is used for heavy structures, arches, architectural buildings, high piers, abutments of bridges, etc.



ROUGH TOOLED ASHLER MASONRY

- In this type Ashler masonry, the sides of the stones are rough tooled and dressed with chisels.



COMPARISON BETWEEN BRICK MASONRY AND STONE MASONRY

(1) **Stone is stronger** and more durable than brick and for public buildings; it is decidedly more suitable than brick. It reflects strength in every inch of it. It is in tune with nature. Its color improves and looks more serene with age.

On the other hand, brick is an artificial product made as a copy of stone. It is flimsy material and plastering is only a camouflage for its defects.

COMPARISON BETWEEN BRICK MASONRY AND STONE MASONRY

(2) **Stone is water proof.** On the other hand, Brick absorbs moisture and with dampness certain salts rise in the walls from the ground and cause disintegration of bricks.

Especially brick should not be allowed to come in contact with urine or sewage and in such places it must always be covered with cement plaster or any other protective coat.

COMPARISON BETWEEN BRICK MASONRY AND STONE MASONRY

(3) **Brick offers greater facility for ornamental work in plaster** as a rough shape can first be given to it by means of any tool. This is not so in case of stones.

(4) **Plaster does not stick so well to stones** as it does to brick.

(5) On account of the regular shape and uniform size of brick, **a proper bond can be obtained with comparative ease.**

COMPARISON BETWEEN BRICK MASONRY AND STONE MASONRY

(6) Due to the **handy size of brick**, brick masonry can be more rapidly constructed than stone masonry.

(7) **Brick wall requires a fixed quantity of mortar** and even with careless masons, the regular shape of the brick considerably reduces the possibility of hollows being left in the body of the wall. This is not so with some stone walls.

COMPARISON BETWEEN BRICK MASONRY AND STONE MASONRY

(8) **It is possible to build brick walls of any thickness** e.g., 4 1/2 in, 3 in, 9 in, 13 1/2 inch etc. Whereas, the minimum thickness of ordinary stone wall is 15 in. Stone walls of a smaller thickness than 15 in, have to be constructed with properly dressed stones, which involves a comparatively high cost.

(9) **Brick does not absorb as much heat as stone does.** So, brick is more fire resistant than stone.

SITE SELECTION

- The site of a building greatly affects its planning, design and construction.
- It may be selected as required or accepted as available.
- The selection of site depends upon the purpose for which the proposed building is to be constructed.

FACTORS TO BE CONSIDERED WHILE SITE SELECTION

(1) LEVEL OF THE SITE

The level of the site must be higher than that of its surroundings, so as to provide good drainage.

(2) CLIMATIC CONDITIONS

The intensity of rainfall and sub-soil water level should be low, so as to avoid dampness in the building.

FACTORS TO BE CONSIDERED WHILE SITE SELECTION

(3) SUB-SOIL CONDITIONS

A hard stratum should be available at a reasonable depth (3ft to 4 ft from the ground level), so as, to construct the foundations of the building safely and economically.

(4) AVAILABILITY OF MODERN AMENITIES

The site must be within municipal limits, so that, modern amenities like, water supply, electricity, sewerage, roads, etc. can be made available with more ease, if there is no provisions at present.

FACTORS TO BE CONSIDERED WHILE SITE SELECTION

(5) AVAILABILITY OF OTHER FACILITIES

The site should provide an easy access from the nearest road and offer sufficient light and air. There should be good and cheap transport facilities available near the site. It is always better, if public services like, fire brigade, police station, etc, are also not very far off from the site.

(6) SURROUNDINGS

The situation and surroundings of the site must be such as to suit the purpose for which the building is to be constructed. Each type of building requires different surroundings, than for others.

GENERAL PRECAUTIONS IN SELECTION OF SITE

(1) The site consisting of reclaimed soil (made useful for cultivation) should be avoided, as far as possible.

(2) The site must not be located in water logged areas or near the bank of a river.

(3) Old quarry sites must be avoided, as far as possible.

(4) The site for a residential building should be away from the area causing foul odor or smoke nuisance due to industrial buildings.

GENERAL PRECAUTIONS IN SELECTION OF SITE

(5) The site for a residential building, school or hospital should be away from noisy areas.

(6) There should be no **disabling easement**.

(**Easement** is a right, which a person may have over another man's land by law, such as, the right to walk over it or to run a pipe through it).

The End