

# ARCHES

## What is an arch ?

Arches are an economical and aesthetic means of spanning openings. An arch is defined as an arrangement of small units of blocks placed side by side over openings in the form of some curve. The blocks support themselves by mutual pressure and the whole arch is maintained in equilibrium by the resistance offered by the supports.

## When to use an arch and which type should be adopted?

Arches can be used over all types of openings and also in verandas as colonnades. It is an economical alternative of RCC lintels or beams.

Parabolic arches are one hundred percent compressive. The others are subjected to bending and compression. However, in rural areas, simplicity of construction should be the deciding *factor and hence* flat, segmental or semi circular arches are recommended

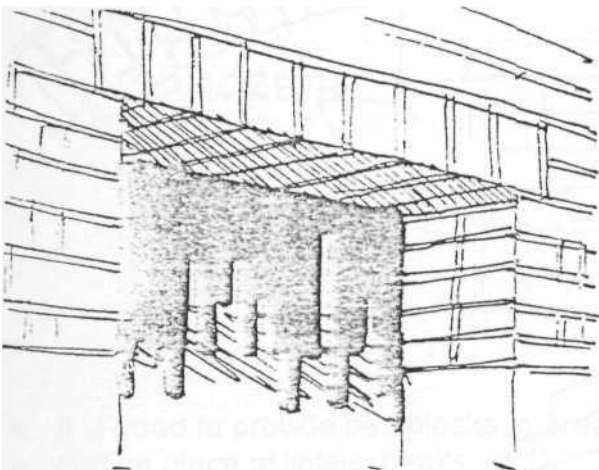
### Advantages

- They are economical due to the use of local materials like bricks.
- They look aesthetically more pleasing.

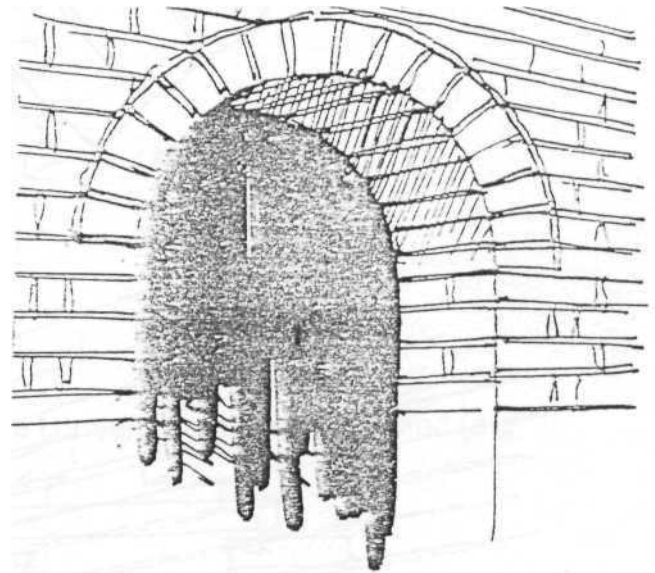
### Limitations

- Need form work

## BRICK ARCHES

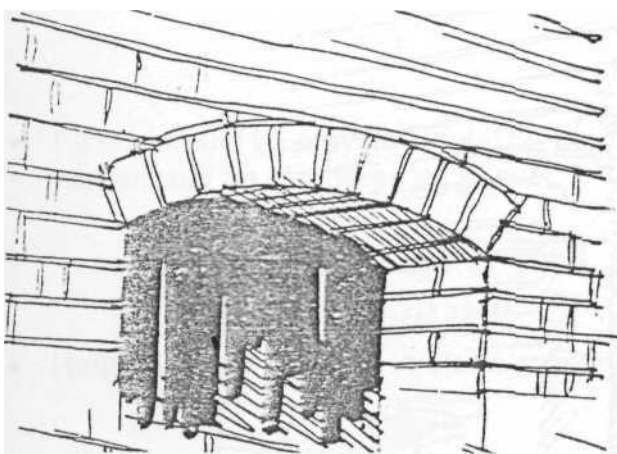


CAN BE FLAT



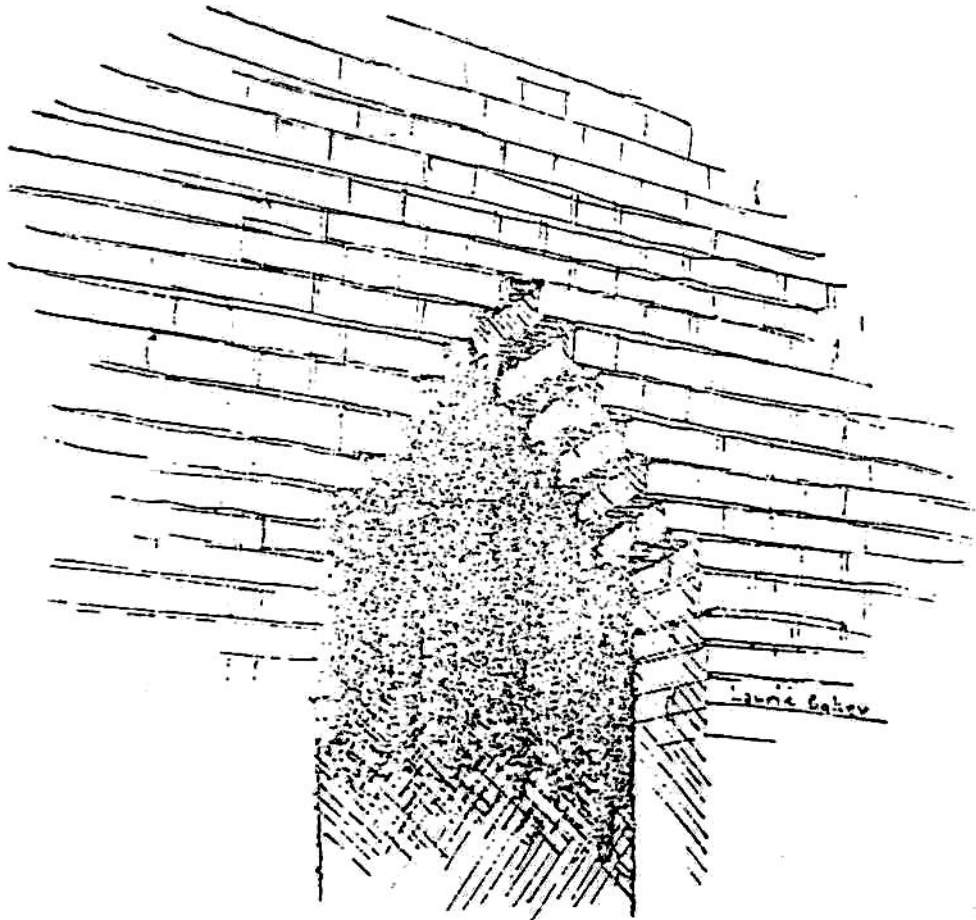
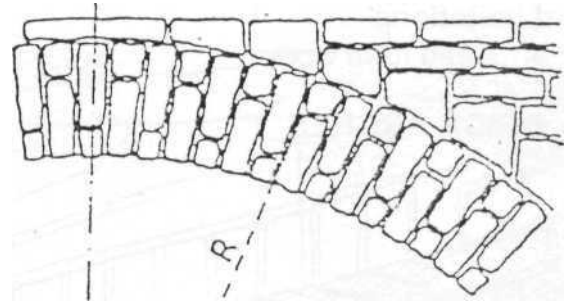
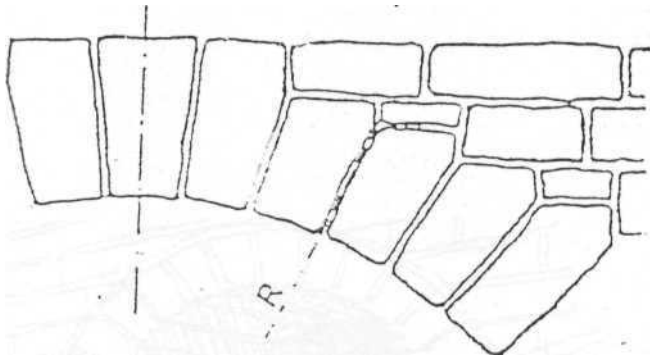
OR SEMI-CIRCULAR

OR EVEN POINTED



OR SEGMENTAL

# STONE ARCHES



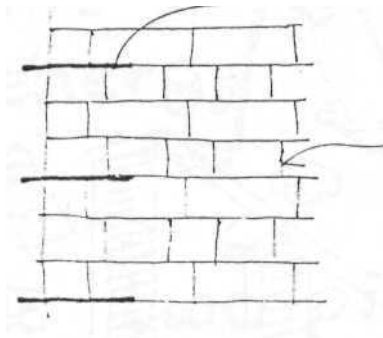
You do not require staging or formwork to construct a simple CORBEL ARCH

**DO'S AND DON'T'S**

- In case of a plinth beam, the beam will go all around the building.
- In case of DPC, space will be left for doors and other openings.
- It is better to insert DW frames during masonry. If not, wooden blocks should be inserted where hold fasts are to be fixed.
- Strong connections are to be provided between different materials/old and new masonry.

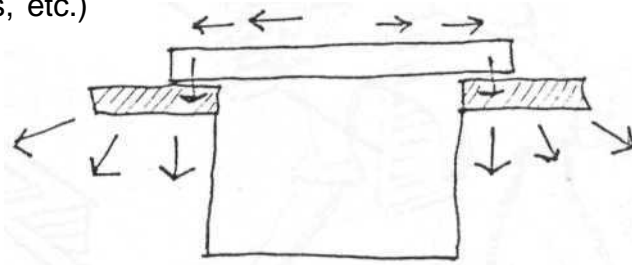
**M.S.FLATS/RODS**

**CONCRETE.  
PILLAR**



**BRICK  
MASONRY**

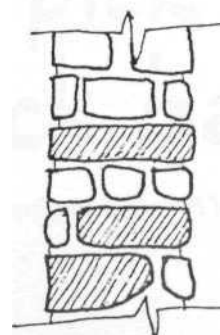
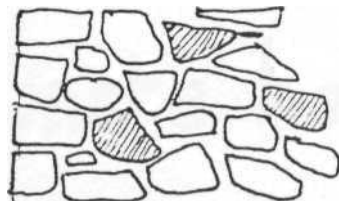
- It is good to provide bed blocks in areas where concentrated load is applied (e.g. resting place of lintels, beaks, etc.)

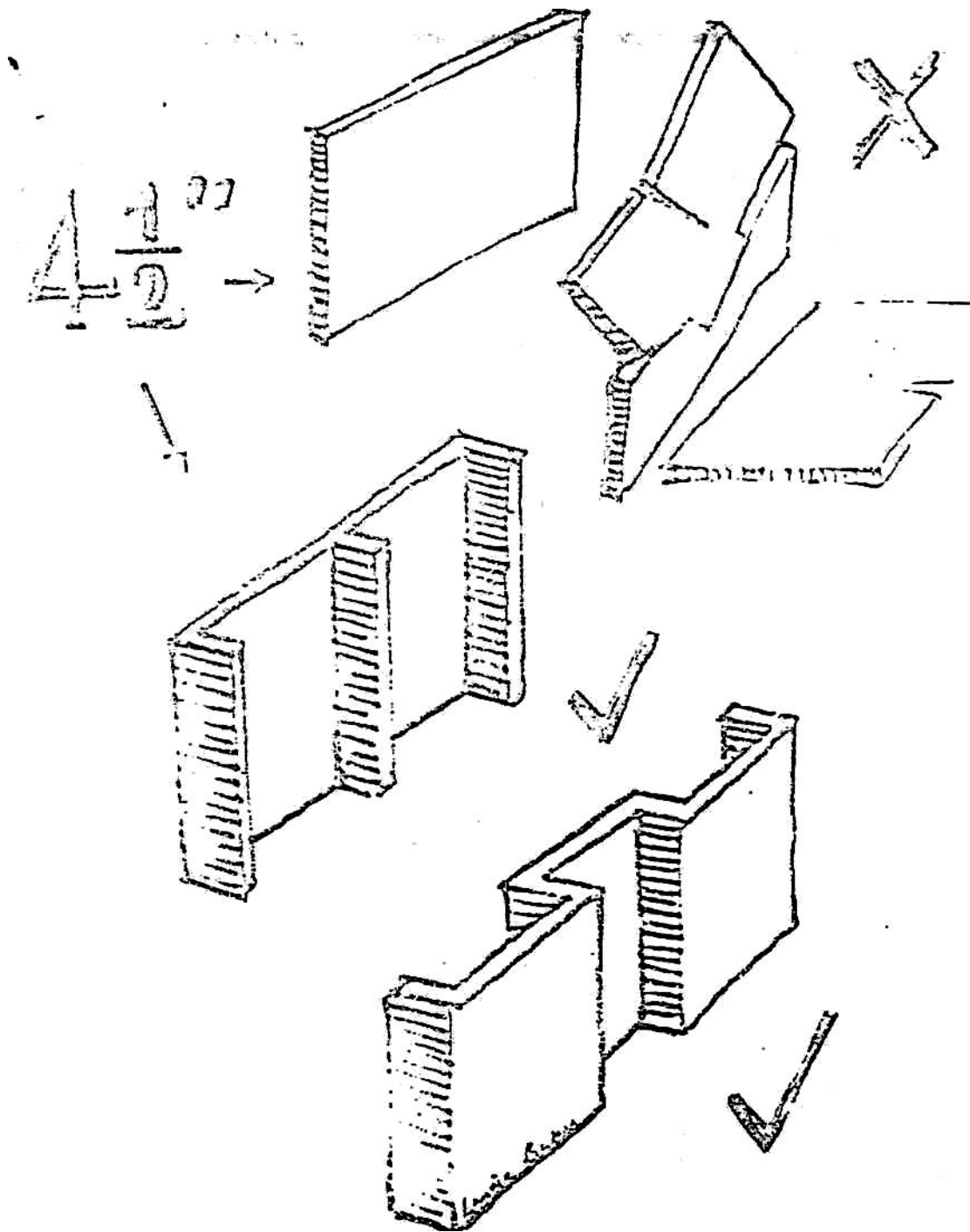


- Pillars should be provided in 4-1/2" block, after every 10' maximum, for stability. Or, the wall should be staggered as shown.



- Headers to be provided in stone masonry.





Extracted from  
PRINCIPLES OF CONSTRUCTION  
BASIC PARTS OF BUILDING'S  
WALLING AND OPENINGS  
GRAM VIKAS  
C.eldoc1/tsunami/ POC\_Site\_Selection(71-130).pdf