SHORING

Shoring is the process of temporarily supporting a building, vessel, structure, or trench with shores (props) when in danger of collapse or during repairs or alterations.

Shoring comes from shore, a timber or metal prop. **Shoring** may be vertical, angled, or horizontal.
Types of shoring

1. Horizontal shoring
2. Vertical shoring
3. Dead shoring

1. Raking Shoring

In this method, inclined members known as rakers are used to give lateral supports to walls. A raking shore consists of the following components:

Rakers or inclined member,

Wall plate,

Needles,

Cleats,

Bracing and

Sole plate.

The following points are to be kept in view for the use of the raking shores:

1. Rakers are to be inclined in the ground at 45^0. However the angle may be between 45^0 and 75^0.

2. For tall buildings, the length of the raker can be reduced by introducing rider raker.

3. Rakers should be properly braced at intervals.

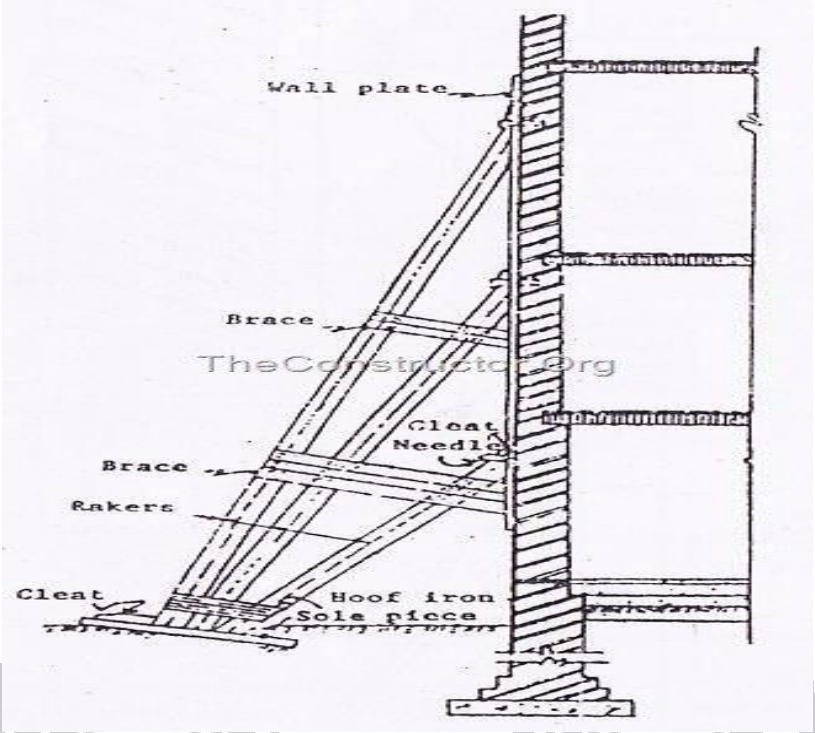
4. The size of the rakers is to be decided on the basis of anticipated thrust from the wall.

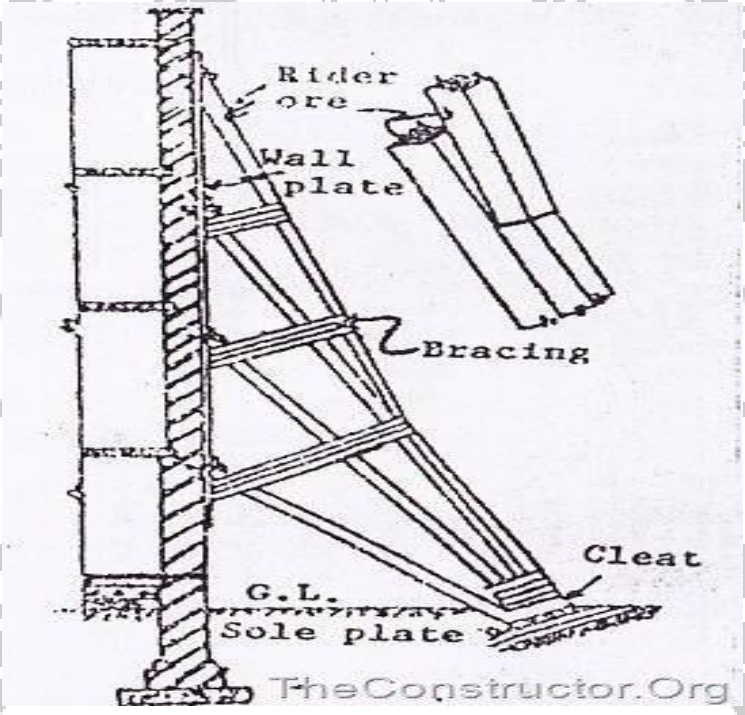
5. The center line of a raker and the wall should meet at floor level.

6. Shoring may be spaced at 3 to 4.5m spacing to cover longer length of the bar.

7. The sole plate should be properly embedded into the ground on an inclination and should be of proper section and size.

8. Wedges should not be used on sole plates since they are likely to give way under vibrations that are likely to occur.



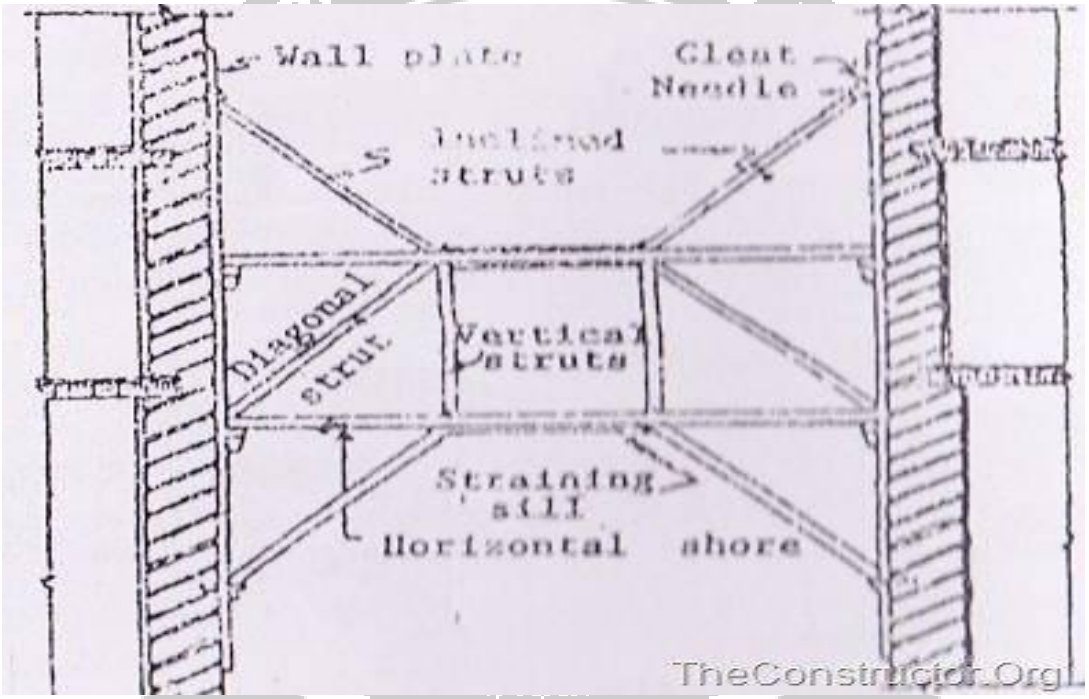


2. Flying Shoring

Flying shores is a system of providing temporary supports to the party walls of the two buildings where the intermediate building is to be pulled down and rebuilt (figure 4 and 5). All types of arrangements of supporting the unsafe structure in which the shores do not reach the ground come under this category.

The flying shore consists of wall plates, needles, cleats, horizontal struts (commonly known as horizontal shores) and inclined struts arranged in different forms which varies with the situation. In this system also the wall plates are placed against the wall and secured to it.

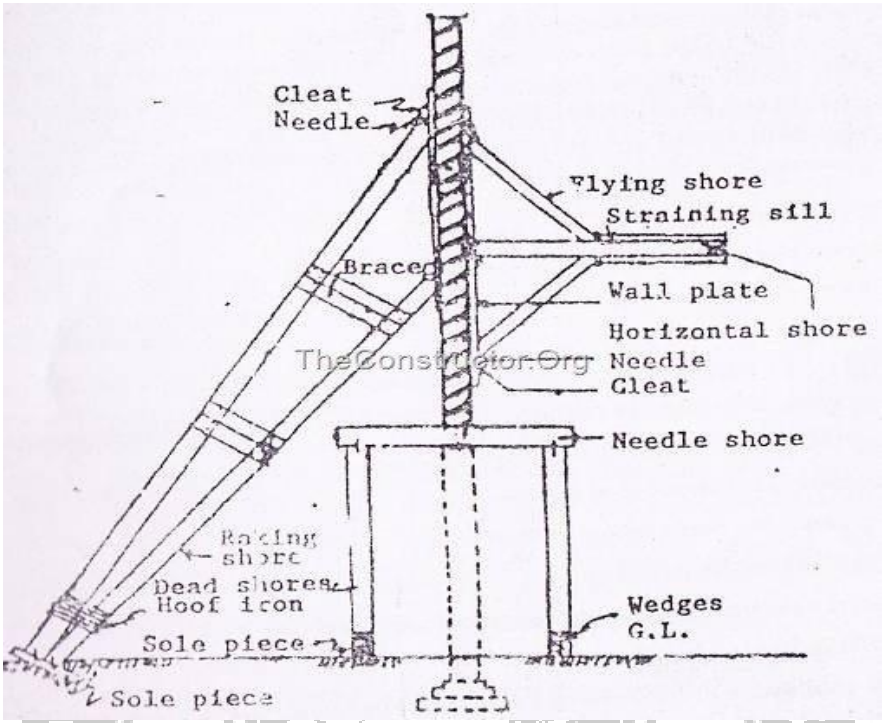
A horizontal strut is placed between the wall plates and is supported by a system of needle and cleats. The inclined struts are supported by the needle at their top and by straining pieces at their feet. The straining piece is also known as straining sill and is spiked to the horizontal shore. The width of straining piece is the same as that of the strut When the distance between the walls (to be strutted apart) is considerable, a horizontal shore can not be safe and a trussed framework of members is necessary to perform the function of flying shore.



3. Dead Shoring

Dead shore is the system of shoring which is used to render vertical support to walls and roofs, floors, etc when the lower part of a wall has been removed for the purpose of providing an opening in the wall or to rebuild a defective load bearing wall in a structure.

The dead shore consists of an arrangement of beams and posts which are required to support the weight of the structure above and transfer same to the ground on firm foundation below.



When opening in the wall are to be made, holes are cut in the wall at such a height as to allow sufficient space for insertion of the beam or girder that will be provided permanently to carry the weight of the structure above.

Distance at which the holes are cut depends upon the type of masonry and it varies from 1.2m to 1.8m centre. Beams called needles are placed in the holes and are supported by vertical props called dead shores at their ends on either side of the wall. The needles may be of timber or steel and are of sufficient section to carry the load above.