BUILDING TECHNOLOGY I

BUILDING Construction I

الانشاء المعمارى

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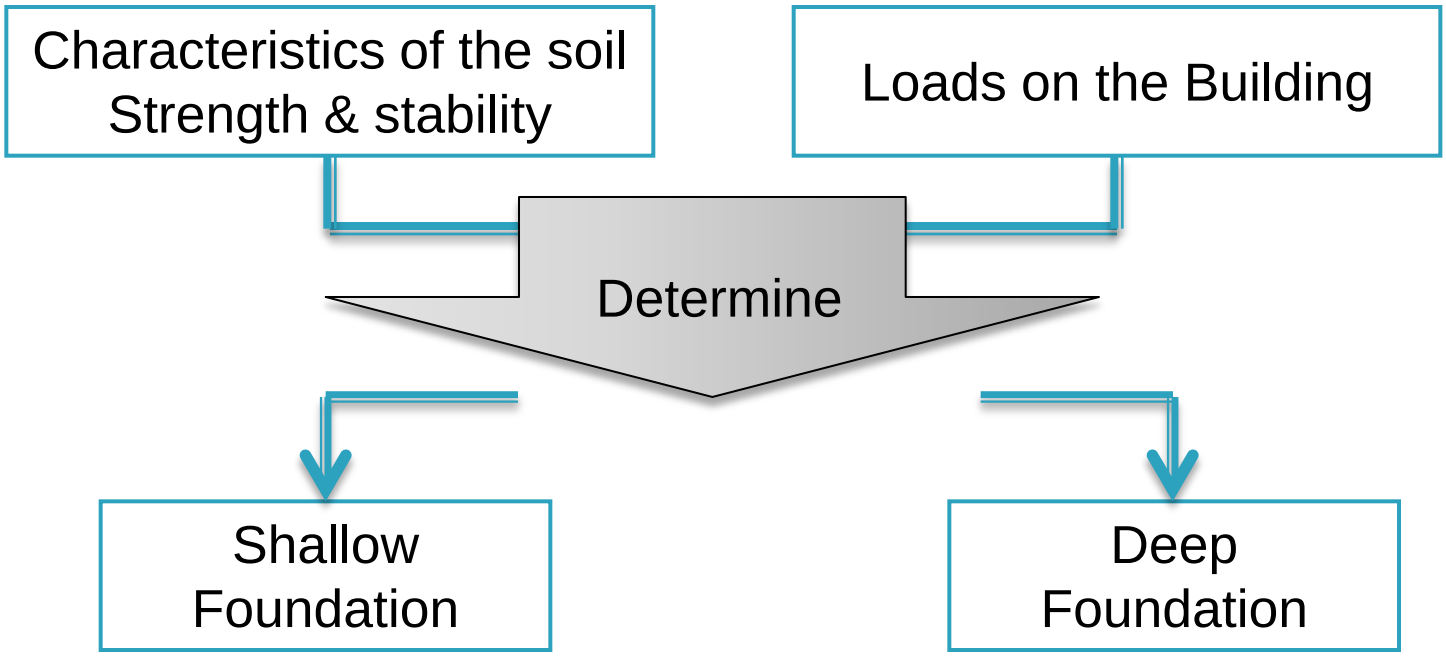
BUILDING TECHNOLOGY I

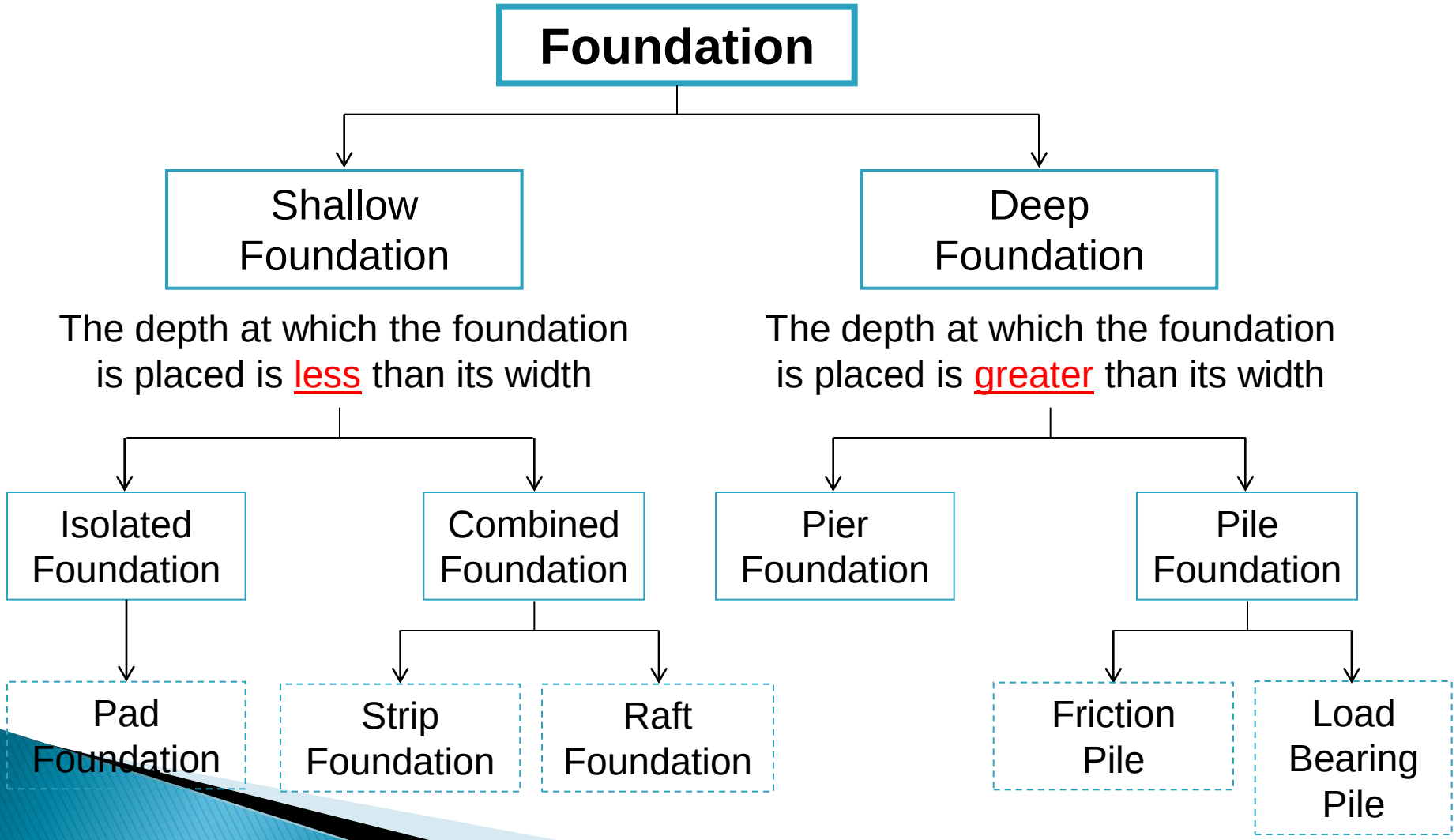
5 Introduction to Foundations

Foundation Systems Types

The choice of Foundation Type



Foundation Systems Types



Foundation Systems Deep Foundation

Can be defined as a column inserted in the ground to transmit the structural loads to a lower level of subsoil.

Function:

To transmit a foundation load to a solid ground.

To resist vertical and lateral load.

Deep Foundation Pile foundation

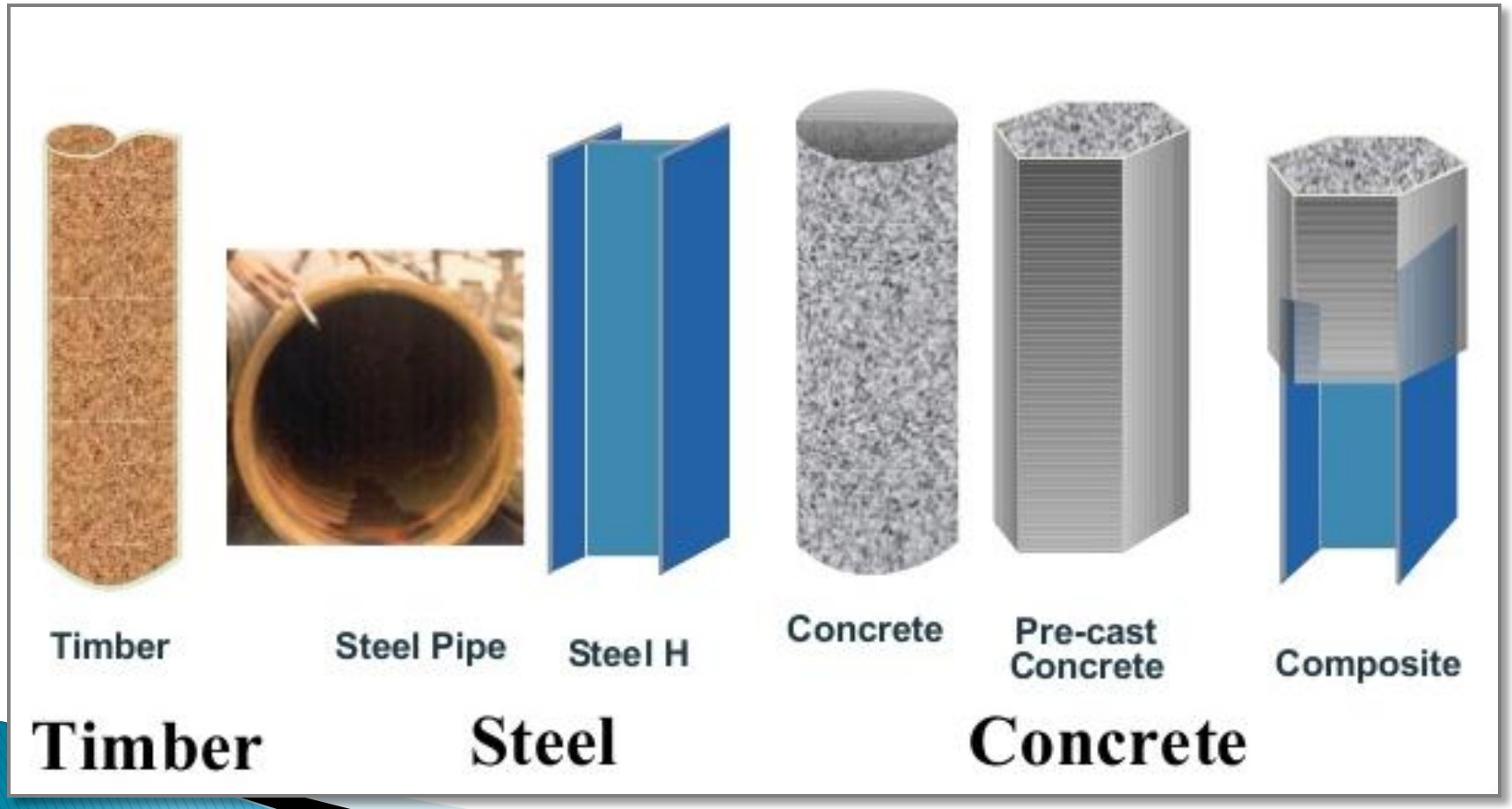
Pile foundation is the most popular to be used because the method of construction is easier and faster.

Types of pile foundation to built a building are depending on:

1. The building type
2. The types of soil
3. The method of construction

Deep Foundation Pile foundation

Materials of pile foundation:

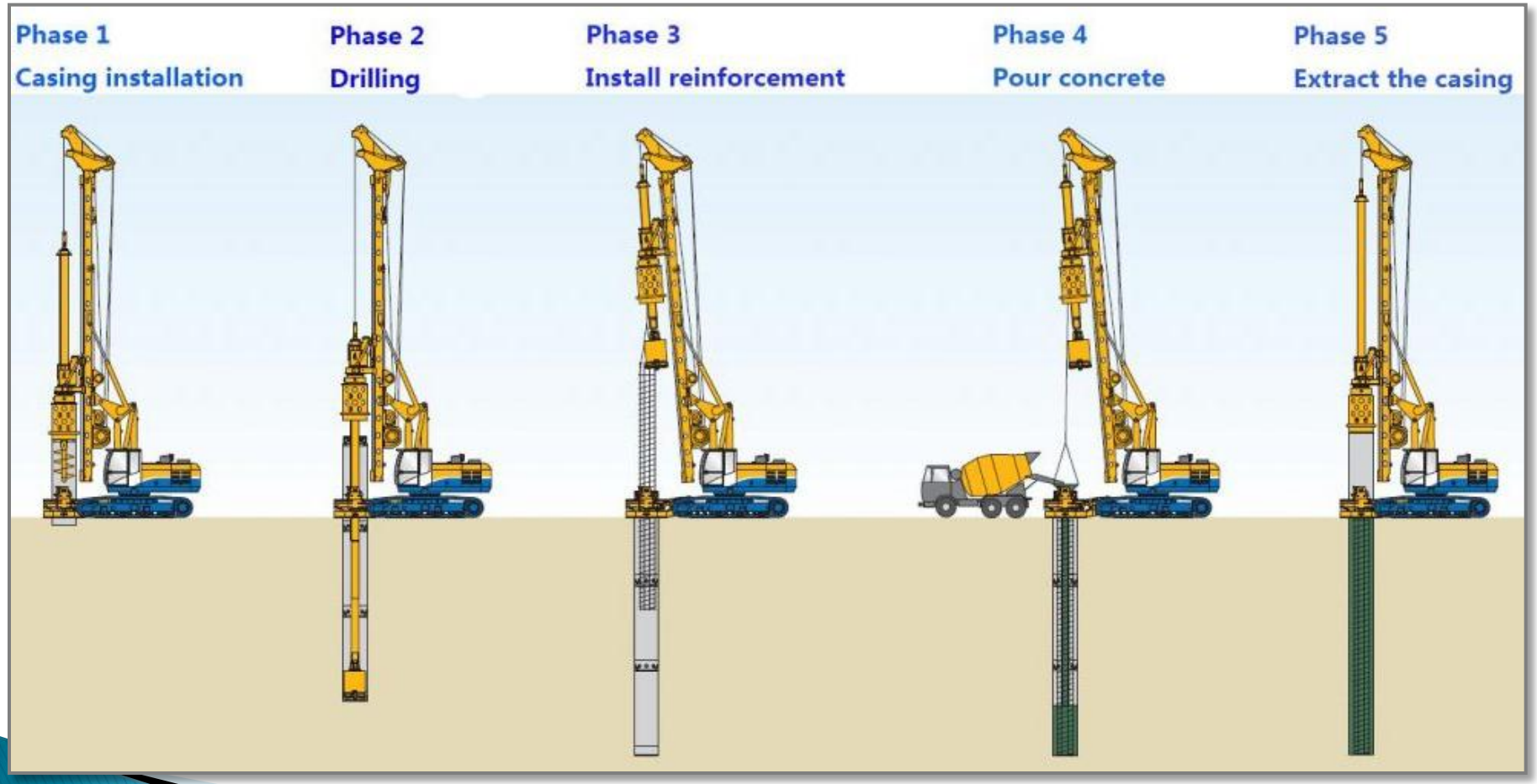


Deep Foundation Pile foundation

How are piles put into place?

1. Piles are first cast at ground level, then hammered or driven into the ground using a “pile driver”.
2. The pile driver lifts and holds the pile perfectly vertical.
3. Then hammers it into the ground blow until it cannot be driven any further into the soil.

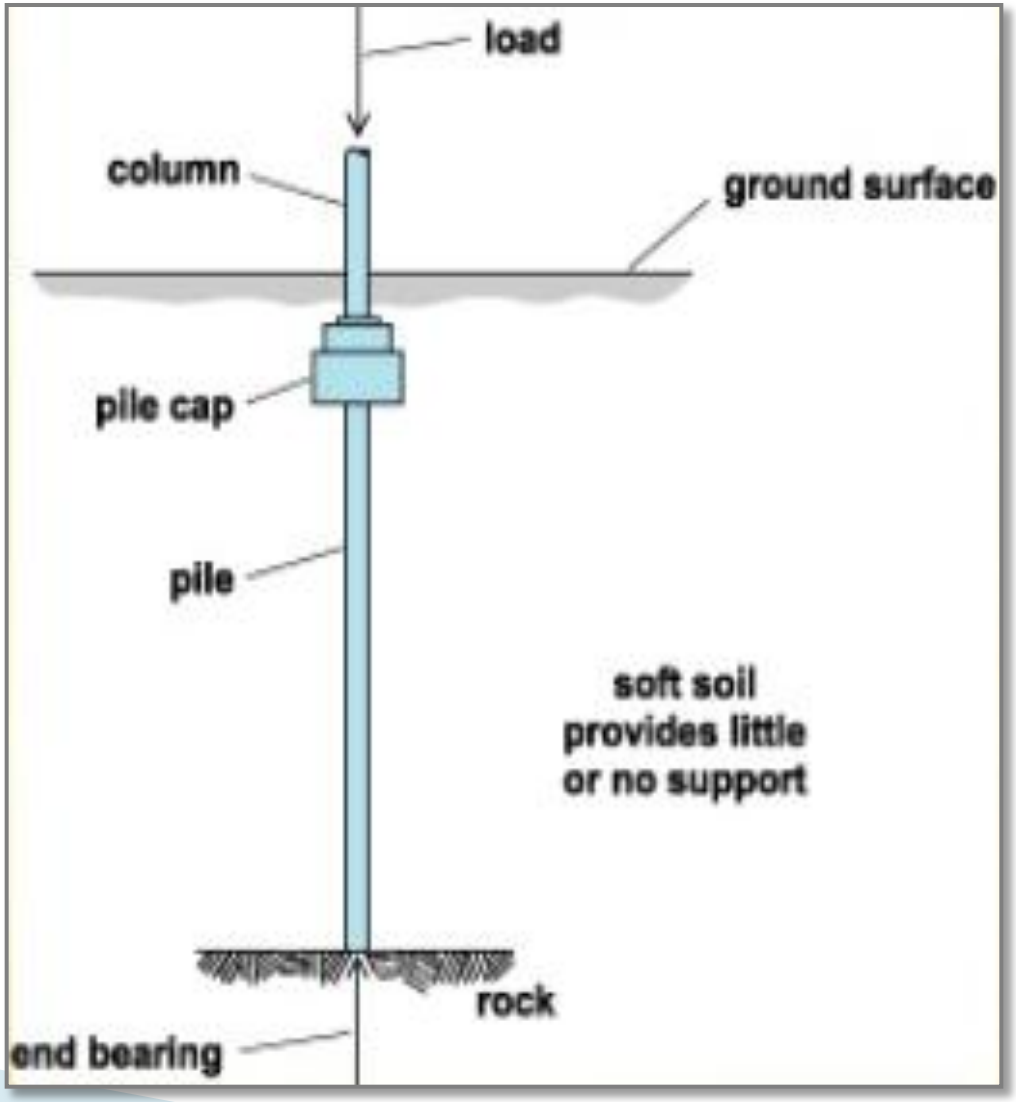
Deep Foundation Pile foundation



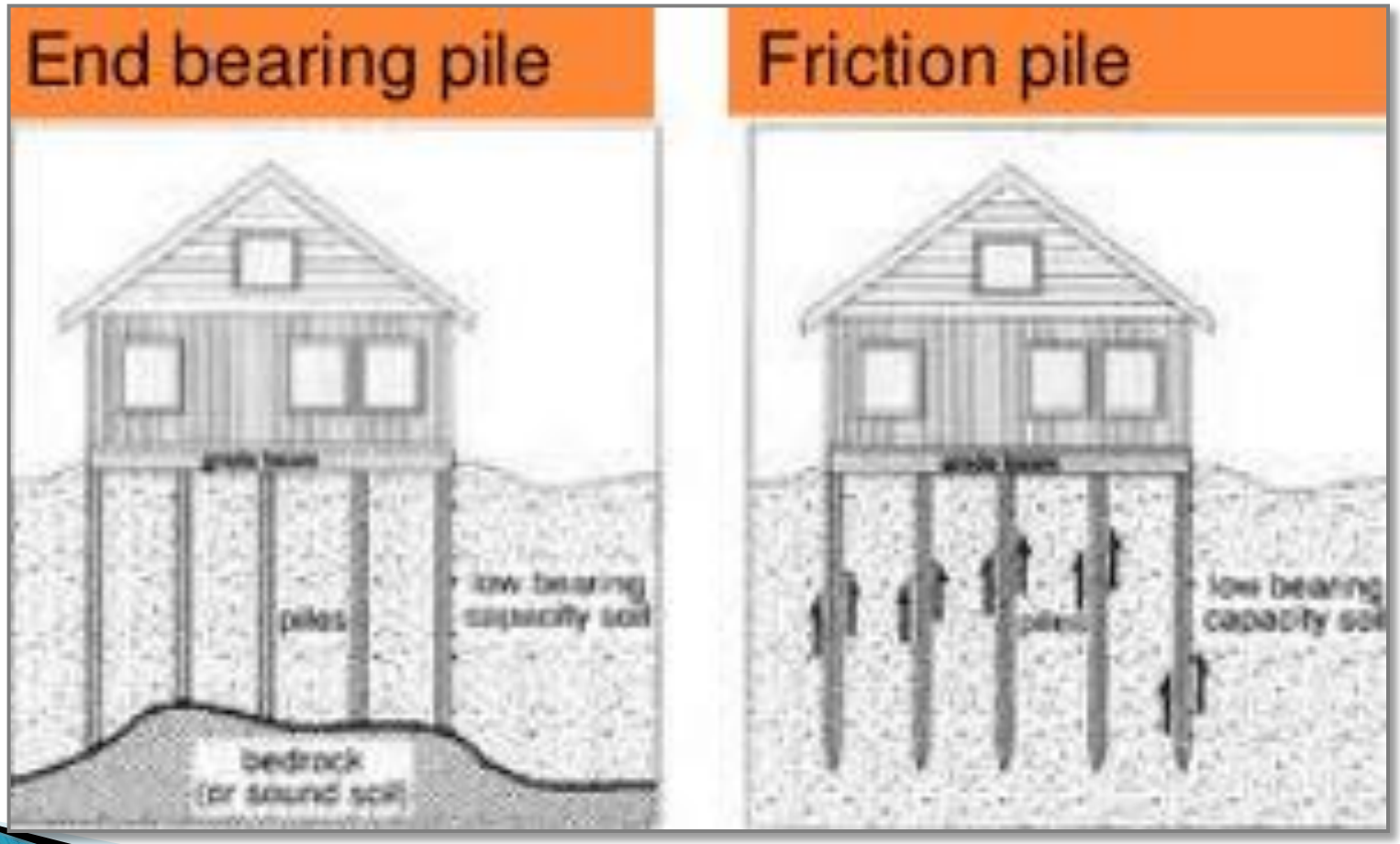
Deep Foundation Pile foundation

Main components of pile foundation:

1. Pile cap
2. Pile

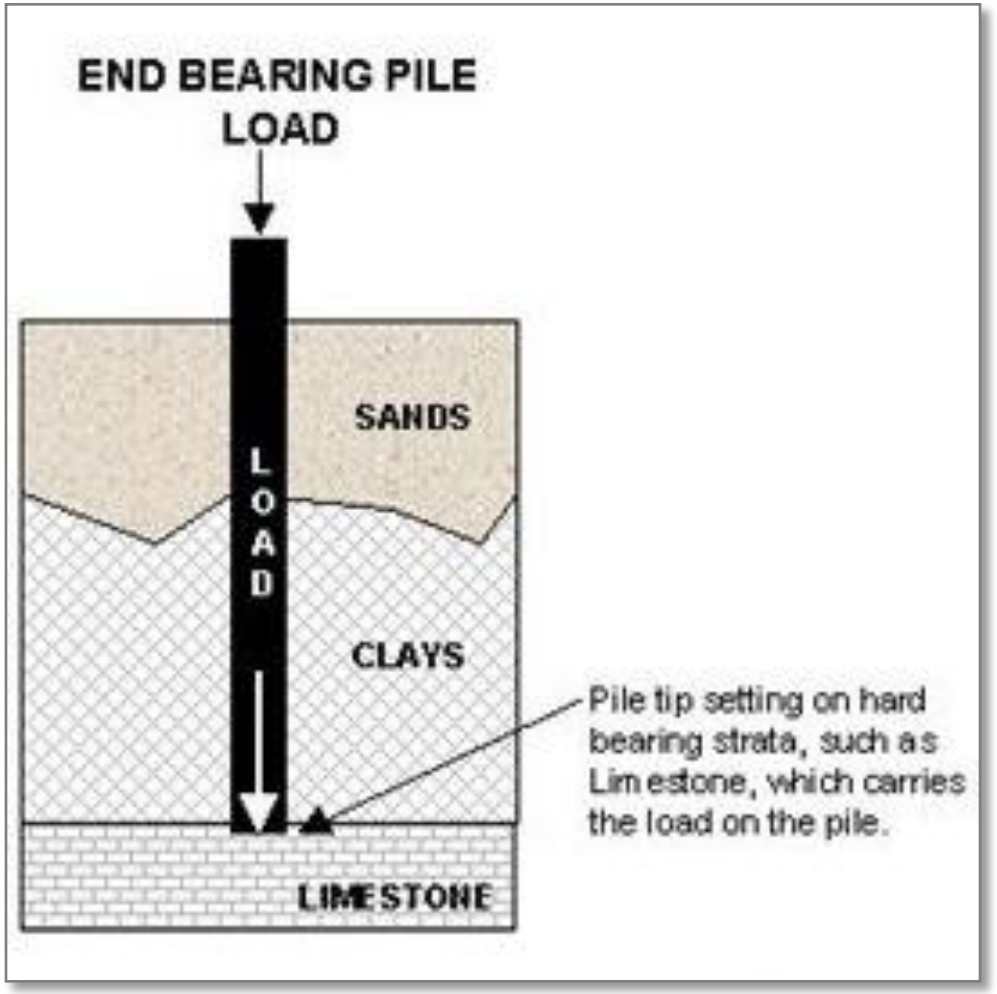


Pile Foundation Types



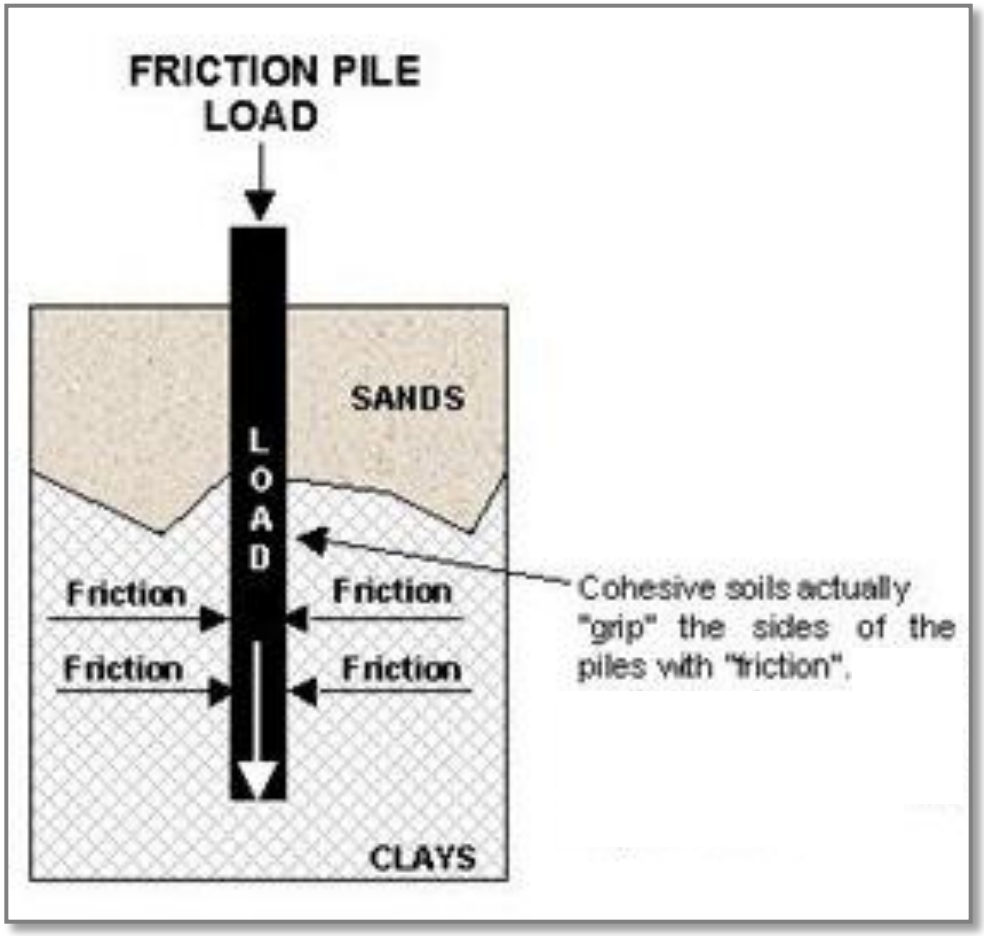
Pile Foundation Bearing Piles

- The bottom end of the pile rests on a layer of strong soil or rock.
- Pile act as pillars supporting the super structure and transmitting the load down to hard stratum from the ground.
- Constructed at 8.0 – 25 m depth.



Pile Foundation Friction Piles

- Are used when hard stratum is very deep or soil is weak to carry the load of super structure.
- the pile transfers the load across the full height of the pile, by friction, and works to transfer the forces to the soil



THANKS