7- Raft Foundation:

Raft foundations consist of a raft reinforced concrete under the whole of the building designed to transmit the load of building to the subsoil below the raft. Raft foundations are used for buildings on compressible ground such as very soft clays, alluvial deposits and compressible fill material where strip foundations would not provide a stable foundation.

The two types of raft commonly used are the flat raft and the slab with beam raft foundation as illustrated in Figs 3-13 and 3-14. The flat slab raft is cast on a bed of blinding concrete and a moisture-proof membrane to prevent damp rising through the slab. As will be seen from Fig. 3-13 the slab is reinforced top and bottom and is of uniform in thickness. Where the ground has a reasonable bearing capacity the raft may not need to be reinforced. For small buildings, such as two storey houses, there is no need to thicken the raft either under the external or internal load bearing walls.

Where the ground has poor compressibility the slab with beam raft foundation which is to support the heavier loads of walls or columns a solid slab raft would require considerable thickness. To make the economical use of reinforced concrete in a raft foundation supporting heavier loads it is practice to form a beam and slab raft. This raft consists of up stand or down stand beams that take the loads of walls or columns and spread them to the monolithically cast slab which bears on natural subsoil.
8- Buoyancy foundation:

It’s the foundation for heavy building with limited area and with poor soil for upper layers that need to deep excavation to reach required bearing capacity of subsoil.

9- Pier foundation:

Pier foundation consists of one, two or more piers with different shape of cross sectional area like square, circular, rectangular…etc.
Pier foundation with large section made with opening across the water to decrease the weight and cost.

Pier foundation can be used when it is impossible to use raft or pile foundation and when the area of the base of the pier is enough to distribute the loads on the subsoil.

1. انشاء المباني - آرتين ليفون - زهير ساكو
2. The construction of building, Part 1&4, by BARRY