For a load bearing wall footing, it is not usually necessary to place the footing deep. If the soil is the same type and is hard in all places it is possible to dig the footing trench as little as 20 cm deep. Of course, for soft wet soil with no drainage, piles (pillars pounded into the ground) will probably be necessary.

**Concrete Reinforced with Steel Footing**

A reinforced concrete footing is good especially in places with earthquakes. Make sure that the steel rod used is free of rust and is well covered with concrete: no pieces should be near the surface or sticking out (except the vertical rebar, which will receive blocks).

**Cyclopean Concrete Footing**

Cyclopean concrete is concrete that uses large stones to minimize surface area and economize on cement. It is not always necessary to use steel in the footing. Steel footings have a disadvantage; after many years the steel may rust, expand and cause the concrete to crack. Instead of a steel reinforced footing, a nonreinforced cyclopean concrete footing can be used. A cyclopean concrete footing will save both cement and steel. Because it is nonreinforced it will be thicker (and possibly wider) than a reinforced concrete footing. Shown below are some examples of non-reinforced footings.

It is not possible to mix large stones in concrete. The concrete and stones must be placed in layers. The large stones should not touch each other. You should select extra-large stones that are as big as the width of the footing to be placed every 60 cm: they will make the structure stable. Use concrete 1:3:5 (cement:sand:stone, ratio by weight). Use mixed stone sizes.
EXAMPLES OF CYCLOPEAN CONCRETE FOUNDATIONS

If a reinforced concrete foundation is used, cast vertical rebar in the footing.

If you use a non-reinforced foundation, use all channel blocks in the first block layer and reinforce it with steel: this is a ring-beam. Tie the vertical rebar to the horizontal rebar.
VERTICAL REBAR

VERTICAL REBAR PLACEMENT

Place vertical rebar at the sides of door openings and at corners and intersections.

Set out the rebar positions accurately. The rebar will be in line with the large holes in the blocks.

VERTICAL REBAR ANCHORING

A building without a reinforced steel footing will use channel blocks as the first layer and tie in the vertical rebar.

Cut rebar as high as you can put a block on it. Or, bend the steel over.

Ways to extend rebar

- Weld
- Bend and hook
- Wire tie