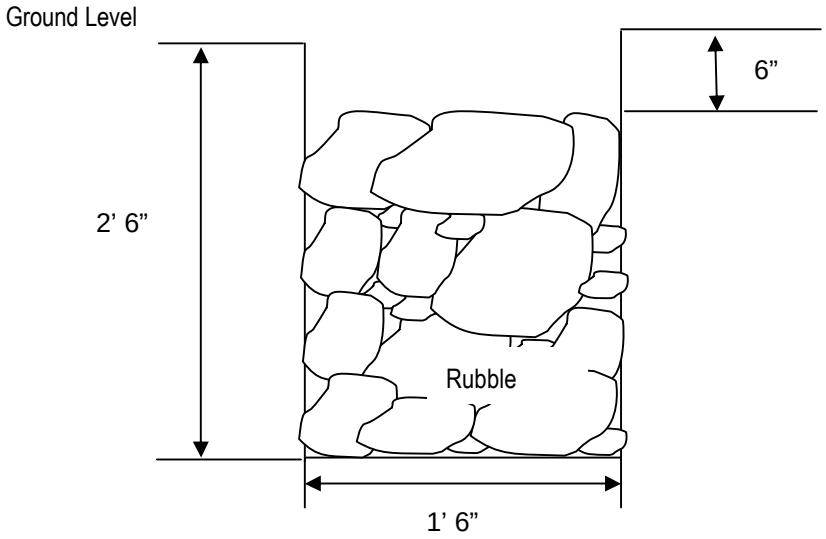
Foundations using dry rubble packing technology

Introduction

Dry rubble packing can be used for constructing foundations on good soil which has a high bearing capacity. The soil should ideally be red-laterite (kabook) soil. Alternatively, if this is not available, a dry rubble foundation can be built on stable soil comprising a mix of clay & sand. However, there needs to be a greater content of sand than clay. **Where the red-laterite soil is not available this technology should be adopted for foundations only with approval by a structural engineer.**

This type of foundation is more suitable for single storey houses and should **not be used in unstable, sandy soil.**



The technology

- The top of the packed stones should be 6” below the ground level. Construction above this should be using cement mortar.
- The sides of the trench should be vertical to prevent movement of the dry rubble (i.e. should not taper).

Who to contact: Project Manager – Integrated Housing Services or the Resource Desk at

Practical Action (formerly ITDG)

No 5, Lionel Edirisinghe Mw, Colombo 5, Sri Lanka.

T +94 (11) 2829412 **F** +94 (11) 2856188 **W** www.practicalaction.org www.janathakshan.org **E** srilanka@practicalaction.org.lk

For specific details please contact the Project Officer in the Practical Action:

Hambantota **T** +94 (11) 4379339 **E** southern@practicalaction.org.lk

Ampara **T** +94 (11) 2224932 **E** eastern@practicalaction.org.lk

- Excavate the trench to the proposed width of the foundation. At a maximum depth of 2‘ 6 “, if you find gravel soil, then proceed with dry rubble packing or else the traditional step foundation would need to be used.
- The packing is made up of rubble of approx 6” x 9” in size, while all cavities should be filled with smaller stones.
- This technology has been tested at a pilot project site done by Practical Action South Asia in Nikeweratiya, Sri Lanka.

Cost saving

- It costs approximately 25% less than a conventional rubble foundation and for a house of 550 sq. ft, the saving would amount to about 25 bags of cement.