

# materials

During our study trip we got a lot of valuable information about building materials in Asmara. Local materials like brick, granite and marble are used in many different ways around the city. Imported materials like steel are often expensive and not that common. Transportation costs and limited import increases the expense further. We will try to use local materials to keep costs down and to lower the carbon footprint of the projects we propose. Use of local materials also create jobs, and with the low labour costs in Eritrea it is possible to use custom made building elements without exceeding the budget.

Common materials in Norway like concrete and timber are not always preferred, and it forces us to think in different way to what we are used to.

## \_concrete

Cement can be transported from a new cement factory close to Mas-sawa. Steel reinforcement has to be imported.

example of use

Concrete tiles for ground cover and flooring. Can be made in different colours and sizes.

Hollow concrete blocks (HCB)



Brick is produced locally in Asmara, close to Edaga Hamus and Aba Shawl. The material is durable and can be reused.

example of use

Mostly used for walls

There are different color options, but the red brick is most common due to the red soil in the area.

\_brick



## \_ceramics

It is a local material, but some of the color pigments are imported. Local pigment can therefore be preferable.

example of use

Ceramic tiles are used as flooring and cladding. It is often seen in mosques, and in some public buildings.

The tiles come in different sizes, also mosaic tiles.



\_granite

Granite is a local material. The nearest quarry is located 40 km from Asamara.

1 m<sup>2</sup> granite costs from 700 Nakfa (300 NOK)

example of use

It is often used in columns, as ground cover, and as construction blocks. It can be polished or rough.





\_marble

Marble is a local material. A marble quarry is located 250 km west from Asmara. Most colors are available - the purer the color, the cheaper.

1 m2 marble costs from 550 Nakfa  
(240 NOK)

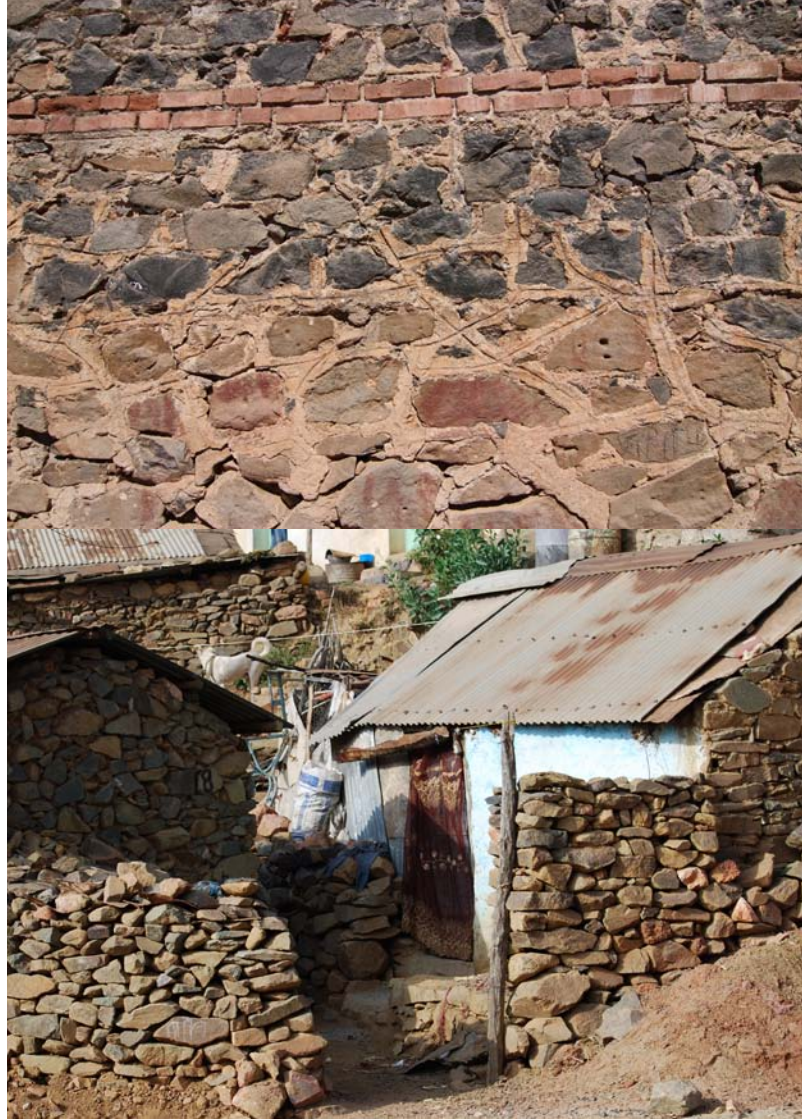
example of use

Marble is used as flooring, cladding  
and ground cover.



## \_local stone

Unprocessed local stone is often used for walls, sometimes mixed with other materials such as brick. Widely used in the Unplanned city.



\_metal

All metal is imported. Construction steel is not a good alternative due to transport, weight and costs. But metal sheets, doors and smaller construction parts can be made at Medeber from old materials. Tin cans and oil barrels are transformed into anything you like.

example of use

doors, gates, fences, older constructions



## \_woven materials

There is very little wind in Asmara, and fabric or plastic cloth can be a good alternative to metal sheets or other roofing. Fabric might not last as long as other materials, but can easily be replaced.

### example of use

The markets are filled with self made simple roof constructions covered with woven materials.



\_asphalt

Asphalt is a very expensive material due to import costs of oil. It can be more expensive than stone covers like granite and marble.



## \_timber

There is lack of construction timber in Asmara.

example of use

Small constructions like pergolas are made from the smaller trees.

Bamboo can be a good alternative to timber, used as a construction material and for cladding/decoration.



Straw as a building material is not that common, but it is used for a number of other things like baskets and mats. Straw weaving is a local handicraft, and items can be custom made.

\_straw

