



Actions speak louder . . .

Fact Sheet no.11: Living with diurnal extremes

Description and analysis

Oceanic climates often have moderately different temperatures between day and night because large bodies of water provide warmth in winter, and cooling in summer. With a few exceptions, coastal areas have higher precipitation and so have greater tree cover and grassland, which also help to even out diurnal temperatures. Further inland, close to the middle of continents temperatures can vary by over 50 ° C diurnally. So buildings are required here that moderate these extremes, retaining warmth at night and keeping cool during the day.

Design response

Although most experts produce designs to maintain even temperatures inside houses by the use of insulating materials and air conditioning, there is a simple solution to the problem of diurnal extremes which is more common with traditional construction technologies. This involves the use of the thermal capacity of the walls to accumulate and store energy from the sun, which acts to both delay the penetration of heat and therefore keeping the building cool during the day, and allowing it to be re-emitted during the colder hours of the night. In order for the walls to have sufficient thermal capacity to function in this way they must be built of cheap, locally available and suitable materials such as clay or laterite.

Parry Associates technical input possibilities

Provision of special machines for crushing and sieving soil (clay or laterite), and presses for producing compressed/stabilised blocks. We can also offer help in project management, expertise in the protection of structures built with unburned or non-stabilised blocks, and the adaptation of processes and or equipment to the specific material types locally available.

Local resources required

A supply of suitable materials such as clay or laterite, labour (to be trained) and processed water.

Potential local business response

It is not always easy to create a commercial market for pressed soil blocks because they cannot be stored in open air and are vulnerable during transport. However the most likely way in which these products will be used is by the builder setting up the production units onsite.

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