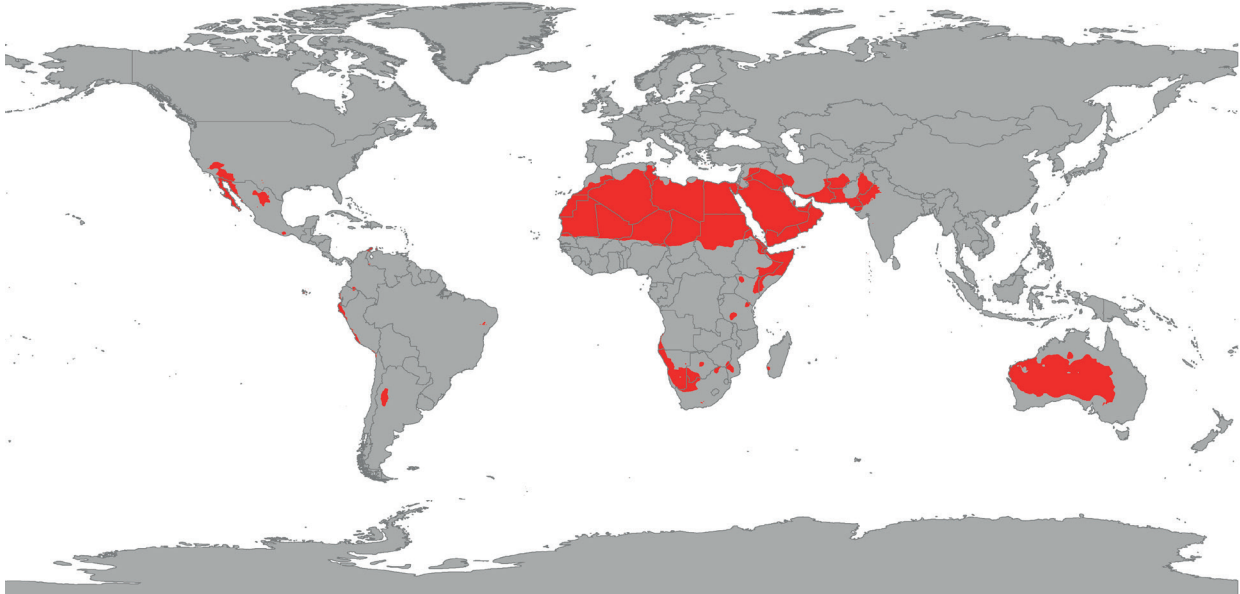


FACADE COMPONENT FOR DRY DESERT CLIMATE



DEFINITION OF DRY DESERT CLIMATE

Dry desert climate (in the Köppen climate classification BWh), also known as an arid climate, is a climate that does not meet the criteria to be classified as a polar climate, and in which precipitation is too low to sustain any vegetation at all, or at most a very scanty shrub.

Dry desert climates are typically found under the subtropical ridge where there is largely unbroken sunshine for the whole year due to the stable descending air and high pressure aloft. These areas are located between 30 degrees south and 30 degrees north latitude, under the subtropical latitudes called the horse latitudes. Hot desert climates are generally hot, sunny and dry year-round.

Hot desert climates feature hot, typically exceptionally hot, periods of the year. In many locations featuring a hot desert climate, maximum temperatures of over 40 °C (104 °F) aren't uncommon in summer and can even soar to over 45 °C (113 °F) in the hottest regions.

DIURNAL SWING

During colder periods of the year, night-time temperatures can drop to freezing or below due to the exceptional radiation loss under the clear skies. Daily variations may be extreme: a swing from 37.5 to -0.5 °C (100 to 31 °F) has been observed in the Sahara Desert (["Sahara Desert", *Terrestrial Ecoregions*, WWF, www.worldwildlife.org]) but are rather around 15 °C (27 °F) and 20 °C (36 °F).



A VERNACULAR MATERIAL: CLAY

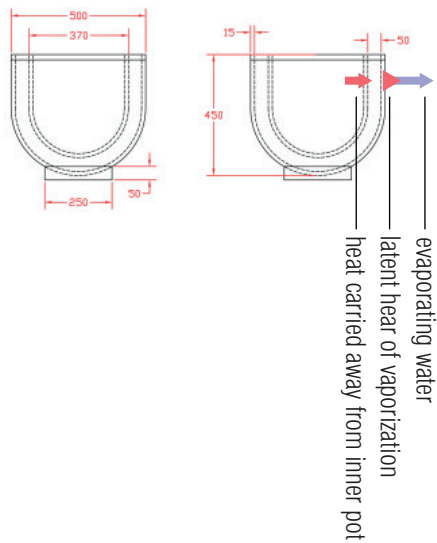
One of the most local materials used in dry climate regions is clay which can be shaped in form of blocks or used as thick cladding over a wooden frame, can be baked or left to dry. Generally clay is an optimal material for dry climates because has a low thermal conductivity other than being easily available. A terracotta block has an U Value of 0.77 W/mK at a temperature of 20°C. Clay also presents a high thermal inertia which allow the mass to hold the heat when irradiated and realising it when there is a higher difference in temperature between internal mass and air. In a dry climate that is constituted by a high diurnal swing a clay wall will absorb the heat during the day realising it gradually during the night when the outside temperature has had a shift of 15-25°C difference. One bricks layer wall is able to delay the temperature realese up to 5 hours while a two bricks layers wall with a 5 cm inner cavity is able to delay the heating realease to up to 8 hours.



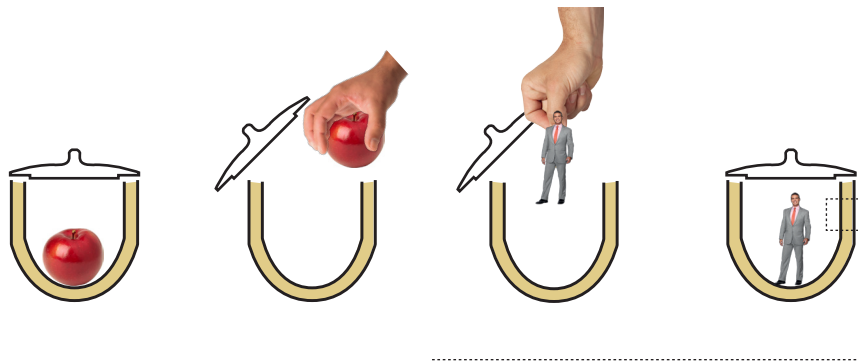
VILLAGE DWELLING IN SUDAN

REFERENCE: ZEER POT (POT IN POT)

A pot-in-pot refrigerator, clay pot cooler or zeer is an evaporative cooling refrigeration device. It uses a porous outer earthenware shell and a glazed inner one, leaving a gap which is filled with humid clay or sand.



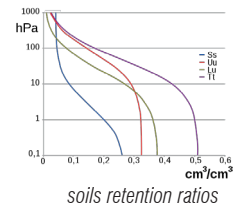
OUTLINE PROPOSAL



terracotta
U value: 0,77



- sand
- clay loam
- clay
- peat



superabsorbant polymer