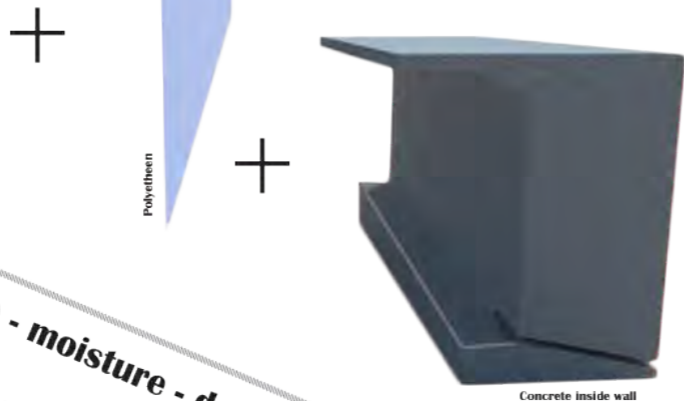
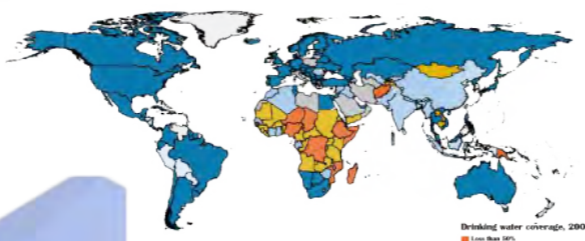
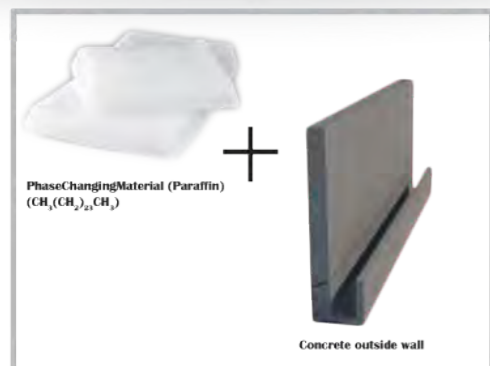
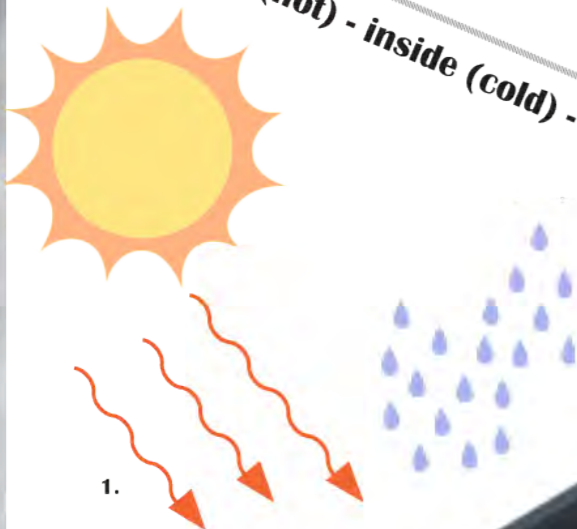


MoistureSchool



Outside (hot) - inside (cold) - moisture - drinking water



1.

2.

1. Upwarming outside wall by sun.

2. Rainwater comes into the wall. The outside wall is warmer because of the paraffin and the warming of the sun.

3. Condensation against inner cold concrete wall.

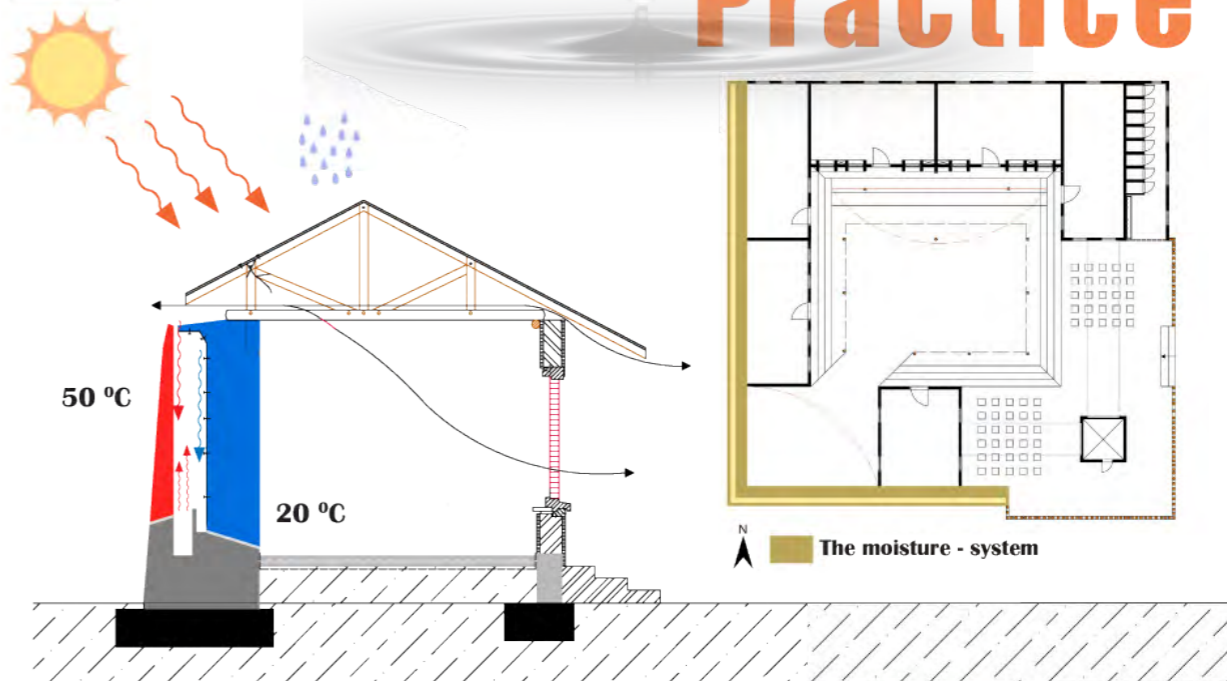
4. Condensed water = 100% pure drinking water.



The MoistureSchool use the natural cycle of evaporation and condensation. Condensation occurs when water vapor is deposited on a surface colder than its surroundings. The outside concrete shell of the MoistureSchool contains a PhaseChangeMaterial (PCM), in this case Paraffin. The shell is able to absorb additional heat due to the phase change of the Paraffin from solid to liquid state. This allows the thin outer wall to become increasingly hot as it

absorbs the sun's heat. The inner wall is a thick concrete wall. This wall is very cold due to the large thermal mass of concrete. When rainwater penetrates into the cavity, the large temperature differences between outside and inside ensures condensation against the cold inside. This results in 100% pure condensed waterflows out of the wall. This system is best applicable in moist, warm climates with abundant rainfall.

Practice



East-façade



South-façade, the system



"The number of people without an improved drinking water supply is now below one billion. More than half of the world's population now has piped water connections to use their homes. Progress is slowest in sub-Saharan Africa, home to a third of the global population using unimproved drinking water sources. Eight out of ten people without (improved) sources of drinking water live in rural areas."