Architect calls for an end to the obsession with lightweight buildings

A recent ECO-study suggests high thermal mass buildings could combat soaring temperatures. 'With temperatures rising due to global warming, high thermal mass buildings, such as those of masonry, have the potential to be cooler than their lightweight counterparts'. This is just one of the principles enshrined in a recent British Study entitled 'UK Housing and Climate Change: Heavyweight v Lightweight construction, undertaken by Chris Twin of Arup for Bill Dunster Architects.

Although such concepts have been understood for centuries, this is one of many recommendations in a study that proposes design responses to climate warming. The report examines the benefits of heavyweight, high mass construction versus lightweight low mass alternatives. In cites, the potentially poor performance of thermally lightweight construction and how 'all other things being equal, heavy thermal mass (greater than 1500 kg/m^3) is able to better absorb excess solar gains'.

Chris Twin says 'A lot of lightweight prefabricated construction will cook as the climate heats up. This will make the occupants uncomfortable and prompt them to install air conditioning.

The report also stresses the importance of managing excess solar heat gains using strategies that include ventilation, shading, domestic appliances and having north facing bedrooms.

Characteristics that will help homes better absorb future excess heat gains are the inclusion of large, exposed areas of heavyweight thermal mass. So a block cavity wall, where the block is plastered on the inside and the ceiling is exposed concrete, could be one way of increasing thermal mass.

Underlining the benefits of heavyweight construction, Architect Bill Dunster recently pleaded for a halt to 'the current obsession with lightweight prefabrication', warning that if housing is not built to the highest standards by 2050, it could need demolishing within 40 years.

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