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HYDROGEL-FILLED CERAMICS CAN COOL BUILDINGS



PROPERTY & CONSTRUCTION

Spain's IAAC institute has developed a new type of building material that responds to the temperature outside and automatically switches from cooling to insulating.

When the weather gets hot, it's usually simply a case of switching on the A/C. Unfortunately, this can help easily rack up huge utility bills as well as your carbon footprint. We've previously seen [Al Bahar Towers](#) in Abu Dhabi use computer-controlled sun screens to keep offices cool in an environmentally-friendly way. Now students from Spain's [IAAC](#) architecture institute have developed a new type of building material that responds to the temperature outside and automatically switches from cooling to insulating.

Known as 'hydroceramics', the textile features hydrogel bubbles that interact with the environment. Hydrogels are able to absorb and retain 500 times their weight in water. According to the student researchers that developed the ceramic building materials, the hydrogels can be loaded with water and on a hot day the liquid in each ball begins to evaporate. A decrease in temperature of the hydrogel occurs when this happens. This means the actual materials of the building cool down organically when the sun comes out, much like sweat cools the skin when it evaporates. The modules then refill when it rains, insulating the building once more.

According to [designboom](#), up to 28 percent of overall electricity consumption caused by traditional A/Cs can be avoided and the materials act as a cheaper alternative building technology due to the inexpensive nature of both clay and hydrogel.

Watch the video below to learn more about the science behind it:

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Are there any other ways to cool buildings in a green way?

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