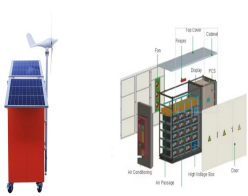
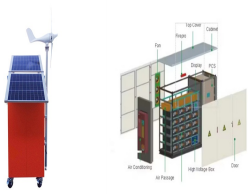


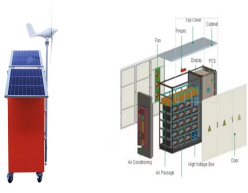
THE ROLE OF BUILDING ENERGY STORAGE AND TEMPERATURE REGULATING MORTAR



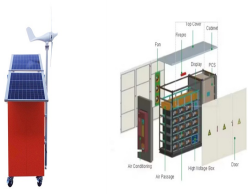
How does thermal energy storage aggregate compare to control mortar? The thermal behavior of the mortar containing thermal energy storage aggregate shows decrease in maximum temperature and temperature amplitude in comparison to control mortar. Average temperature fluctuation range of mortar having thermal energy storage aggregate was 10.8°C less in comparison to control mortar.



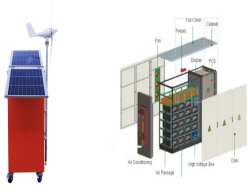
How does the thermal behavior of cement mortar affect indoor temperature? The thermal behavior of the cement mortar plays a significant role in regulating the indoor temperature of the building. Several efforts have been made in recent years to improve the thermal properties of the cement mortar and cement plaster (Benazzouk et al., 2008, Du et al., 2021).



How do building elements store thermal energy? To overcome these drawbacks of sensible thermal energy storage, the building elements are embedded with PCM. PCM stores thermal energy in latent form. In latent heat storage, the material stores thermal energy by undergoing phase transformation at an almost constant temperature.

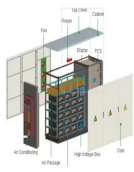


How to increase thermal energy storage capacity of building elements? The combination of building materials with PCMs is an efficient way to increase the thermal energy storage capacity of construction elements. Thereby, wallboards, floors, roof, concrete and other parts are integrated with PCMs in order to improve the thermal performance of the building.

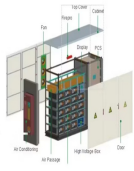


Does the Order of material layers improve thermal energy storage performance? The results revealed that optimizing the order of material layers can significantly improve the thermal energy storage performance of the wallboard in comparison to increasing thickness of the PCM layer. The maximum indoor temperature reduction is 3.1% and thermal amplitude reduction is 31%.

THE ROLE OF BUILDING ENERGY STORAGE AND TEMPERATURE REGULATING MORTAR



Do mortars need a high mechanical strength? For such a reason, the research has moved towards the investigation on mortars for interior and/or exterior coatings, where high values of mechanical strength are not required.



A phase change energy storage and phase change temperature technology, which is applied in the field of building materials, can solve the problems that phase change mortar is difficult to ???



This combination leads to the increase in thermal energy storage capacity for maintaining thermal comfort in the building, (2) In building roofs, concreting work can be done by adding gypsum ???



The phase change energy storage mortar has good thermal performance and energy storage and temperature regulation capability while meeting the requirements of mechanical properties,



A technology of phase change energy storage and phase change temperature, which is applied in the field of building materials, can solve the problems of high cost of phase change ???

THE ROLE OF BUILDING ENERGY STORAGE AND TEMPERATURE REGULATING MORTAR



The growing global energy demand, particularly in India, calls for innovative strategies to improve building energy efficiency. With buildings contributing significantly to energy consumption, especially in cooling ???