The role of building energy storage and temperature regulating mortar

Can phase change energy storage materials be used in building energy conservation?
To explore the application of phase change energy storage materials in building energy conservation, in this study, an innovative composite thermal energy storage cement mortar (CTESCM) was developed using lauric acid-palmitic acid/expanded graphite (LA-PA/EG) as the composite phase change material (CPCM).

How can bio-based phase change materials manage temperature fluctuations and maintain internal temperature?
Innovative techniques must manage temperature fluctuations and maintain internal temperature using eco-friendly methods. This may be carried out by and large thru thermal energy storage (TES),in particular thru latent heat energy storage(LHES) in bio-based phase change materials (BPCMs).

How can a phase change material improve the thermal energy storage capacity of concrete?
Integrationof Phase Change Materials (PCMs): Investigating the integration of PCMs into concrete can enhance its thermal energy storage capabilities. Research can focus on developing new PCM-concrete composites or exploring the use of microencapsulated PCMs to enhance the latent heat storage capacity of concrete. 4.

Why is concrete a thermal energy storage medium?
Concrete has the ability to absorb and store significant amounts of heat energy[26,27]. This enables it to act as a thermal energy storage medium,where excess thermal energy can be captured and released when needed to balance energy supply and demand.

What is thermal energy storage (TES) in bio-based phase change materials (bpcms)?
This may be carried out by and large thru thermal energy storage (TES), in particular thru latent heat energy storage (LHES) in bio-based phase change materials (BPCMs). BPCMs possess specific chemical, physical and thermal characteristics, making them essential for meeting energy management specifications.

Why is macro-encapsulated thermal energy storage Concrete important?
Cui et al. contributed by developing macro-encapsulated thermal energy storage concrete, emphasizing both the mechanical properties of the material and the importance of numerical simulations.

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