

عنوان مقاله:

Intelligent Buildings by Using Smart Materials in Architecture and Design

محل انتشار:

کنفرانس بین المللی عمران، معماری و توسعه پایدار شهری (سال: 1392)

تعداد صفحات اصل مقاله: 14

نویسندگان:

,Hadi Zohouri Khosrowshahi - Lecturer, Department of Architecture, Islamic Azad University, Zanjan Branch, Zanjan, Iran

,Mohammad Bager Zohouri Khosrowshahi - Master of Civil Engineering, Department of Civil, Islamic Azad University, Shabestar Branch, habestar, Iran

خلاصه مقاله:

Buildings today are complex concatenations of structures, systems and technology. Over time, each of the components inside a building has been developed and improved, allowing modern-day building owners to select lighting, security, heating, ventilation and air conditioning systems independently, as if they were putting together a home entertainment system. Decades ago, when we first began treading in the murky waters of "smart" materials and micro-systems, we had little information to guide us. Although there had already been rapid expansion in these technologies in the science and engineering fields, particularly in regard to sensor development, their entry into the design arena was, at best, idiosyncratic. Clearly, the knowledge about smart materials and technologies within the science and engineering realms is so vast that any given engineer will have a different knowledge set than another, even in the same area of specialty. What knowledge, then, should we bring across the divide to the designers? Several different materials, components and assemblies were then chosen and described to illustrate how these building blocks could be applied to help understand and ultimately exploit each example's characteristics. Smart materials have been comprehensively experimented with and rapidly adopted in many other fields - finding their way into products and uses as diverse as toys and automotive components. Our charge is to examine the knowledge gained in other disciplines, but develop a framework for its application .that is suited to the unique needs and possibilities of architecture

کلمات کلیدی:

Technology, Smart Materials, Architecture, Smart components, Intelligent Buildings

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