

Technological Measures to Reduce the Environmental Impact of Swimming Pools

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Abstract : In the last decades, the construction of swimming pools for recreational activities has grown exponentially in southern Europe. Swimming pools are used both for private use in villas and for collective use in hotels or condominiums. However, they have a high environmental impact, mainly in terms of water and energy consumption, being used for a short period of time, depending significantly on favorable atmospheric conditions. Contrary to what would be expected, not enough research has been conducted to reduce the negative impact of this equipment. In this context, this work proposes and analyses technological measures to reduce the environmental impacts of swimming pools, such as thermal insulation of the tank, water balance in order to detect leaks and optimize the backwash process, integration of renewable energy generation, and a smart control system that meets the requirements of the user. The work was developed within the scope of the Ecopool+++ project, which aims to create innovative heated pools with reduced thermal losses and integration of SMART energy plus water management systems. The project is in the final phase of its development, with very encouraging results.

Keywords : swimming pools, sustainability, thermal losses, water management system

Conference Title : ICSBAS 2023 : International Conference on Sustainable Buildings, Architecture and Sustainability

Conference Location : Paris, France

Conference Dates : June 22-23, 2023