

Smart Sustainable University Campus: Aspects on Efficient Space Utilization at National Taiwan University of Science and Technology

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Abstract : A smart sustainable university campus is multi-dimensional. The success requires intensive inter-disciplinary coordination among all users and the expert group and long-term optimization. This paper reported the design and realization process of the dense and campus NTUST campus where space sharing is essential. Two-phase web-based interviews with students were conducted regarding where they study between classes as well as how they move within the campus. Efficient and active utilization of public and semi-public spaces, in particular, the ones near the ground, were progressively designed and realized where lobbies, corridors, reading rooms, and classrooms not in use were considered. Most of the spaces were equipped with smart monitoring and controls in terms of access, lighting, ceiling fans, air condition, and energy use. Mobile device apps were developed regarding the management of the spaces while information about energy use, environmental quality, and the smart sustainable campus project itself were provided to stimulate the awareness of sustainability and active participation in optimizing the campus.

Keywords : smart, sustainability, campus, space utilization

Conference Title : ICSAUD 2018 : International Conference on Sustainable Architecture and Urban Design

Conference Location : Kyoto, Japan

Conference Dates : November 15-16, 2018