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Wireless Friendly and Energy Efficient Buildings (WiFEEB)

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While the energy efficiency is often the focus when retrofitting existing buildings and designing new buildings, it has been equally important to eliminate their carbon emissions as seen in schemes with zero-emission and low-impact buildings in order to tackle climate change and global warming environmental issues. However, the working and home environment is driven increasingly by energy efficiency and electronic communications whether it be the internet, smart energy metering, telephone, computer data or multimedia exchange. The wireless performance of building design is not understood and the construction industries do not consider wireless system performance in their designs or specification despite the rapid employment of metal skins and windows and facades containing metallised layers for energy conservation, both of which are a significant problem for wireless signal propagation. Hence, there is a significant need to understand the performance of buildings and construction materials for efficient energy consumption and for the efficient propagation of radio waves. The study has been undertaken within the framework of an EU funded project, namely 'Wireless Friendly Energy Efficient Buildings' (WiFEEB), and the paper presents the key findings resulting from the WiFEEB project and addresses how buildings and the built environment can be both energy efficient and wireless friendly. Our objectives have been to develop and verify the new concept of the wireless friendly, energy efficient building. The wireless propagation properties of building and insulation materials have been assessed and presented.

Biography

Hasim Altan is an Associate Professor (Reader) at the British University in Dubai (BUiD); Honorary Lecturer (Fellow) at Cardiff University - Welsh School of Architecture (WSA); and Professor of Sustainable Architecture, at the School of Architecture & Interior Design at Canadian University Dubai (CUD). He is a Chartered Architect (RIBA) and a Chartered Engineer (CIBSE) with over 16 years of experience in the field of Architecture and Sustainable Built Environment. In addition to supervising 12 PhD students, he has published over 180 refereed academic journal and international conference papers in related fields.

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