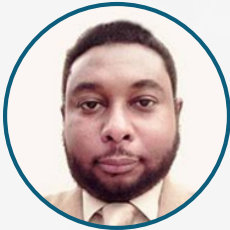


GLOBAL SUMMIT ON RENEWABLE AND SUSTAINABLE ENERGY



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Wind energy and the Built Environment

Abstract: Wind energy and the urban or built environment may not be in the eyes of many observers nowadays as a promising prospect due to economic and technical issues. However, with the right technology at the right place wind energy is always readily available. It is fair to say confidently that the whole urban setting can be designed from the start to be wind energy conducive rather than an obstacle or hinderant. Architectural forms that can boost wind speeds at every level of the city are possible. Together with a host of many other enhancers of aerofoils, diffusers and shrouds. These technical enhancers can work for new buildings as well as retrofitting to existing ones. Furthermore, wind interactions with architecture, how wind could be detrimental to architecture and how architectural form can proactively manages and controls wind with less side effects. How architecture can harness wind energy. This may be through an aerodynamic version of form of an architecture resembling to the well-known acoustical form. However, the later may only be visible internally in buildings, the former is clearly exposed and integrated within the architectural image of buildings. In both cases careful planning and arrangements have to be in place for requirements needed, then testing/simulation and optimizing the solution until a final resolution is arrived at. Thus the product of producing an aerodynamic version of architecture should be a sustainable architecture.

Keywords: Wind energy augmentation, Building integrated diffusers, Aerodynamic architectural optimization, Wind energy optimization in buildings, wind energy harvesting,

Biography: Dr.Elbakheit is a registered consultant in sustainable Architectural design majoring Photovoltaic and wind turbine integration into buildings. Obtained his doctorate degree at the University Of Nottingham, UK 2007. The research topic was ' Enhanced Architectural integration of Photovoltaic and wind turbines into building Design'. It aimed at utilizing the architectural design forms to create favorable conditions for integration of photovoltaic and wind turbines to maximize their performance as well as the architectural environment. In 2002, he graduated with a first class (Distinction) MSc. In Renewable energy and Architecture from Nottingham University, UK. He has a BSc. 1994 in Architecture.