Wind role investigation in urban public spaces of hot and humid region in Bushehr, Iran

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Abstract

Taking regional elements into account has plays a considerable role in urban public space design. Cities, urban elements, and their function have been always affected by climatic elements. From the viewpoint of the mutual effect of urban public space design and urban climate change, most potentialities rely upon wind conditions. Urban wind speed in the streets along with urban design elements like Street orientation, building height and density, distribution of high buildings, etc. undergo considerable changes. One of the most important effects of wind on urban public spaces is creating conditioning in public spaces. The most important climatic factor on urban conditioning is "Regional wind". Furthermore, temperature differences between cores populated part of the city and open suburb areas will cause air flow toward the city center. Urban wind conditions, especially in the streets, directly affect human thermal comfort, energy consumption rate, heating and cooling, and air pollution concentration rate (Ranjbar, Pourjafar & Khaliji, 2011). Moreover, urban public space and how it was designed can affect the control of wind on different levels, especially pedestrian level. This issue is highly important in the areas which have special climate in which wind flow considerably affects thermal comfort (Szucs, 2013). Development of scientific analysis tools has grounded a more accurate inspection of the function of regional elements like urban public spaces. This scientific platform provides the essentials for a cleverer use of regional elements considering life style changes and shifts. Quality and its consisting components are key discussions in urban public space design. And regional elements play an important role in the quality of residential and urban spaces, especially quality of comfort (Ranjbar, Pourjafar & Khaliji, 2011). Hot and humid regions highly need appropriate wind to create thermal comfort. In addition to residential units, this thermal comfort should also be created in urban spaces. For the combined presence of citizens and vitality of urban spaces are the results of this issue.
This research aims to investigate the role of the wind in urban public spaces. This research seeks the answer to this crucial question that to what extent the wind affects public spaces. The methodology this research is "Case Study". Data collection techniques are: Documentary Research and Observation. Data assessment was also conducted qualitatively. First, this research tries to define public space, analyse wind flow and the role of the wind in urban public spaces. Then accurately inspecting Bushehr City regarding Location, climatic characteristics, and public spaces; the role of the wind in public spaces has been scrutinized. Bushehr is located in southern Iran and northern Persian Gulf coasts; and urban public spaces were built according to regional circumstances.

Keywords: urban public space, urban wind flow, hot and humid region, Bushehr