The Impact of Climate Change on Architecture: An Evaluation Based on Continental, Mediterranean, and Black Sea Climates

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Abstract:

The effects of climate change on architectural design are pretty significant. These include the increased need for heating or cooling in buildings due to variable weather conditions, the increased demand for heating in cold climate conditions, the rising need for more resilient buildings to withstand floods and water disasters, and the threat to coastal buildings as sea levels rise. In addition to these potential adverse effects, damages caused by wind and storms and the impact of seasonal changes on energy consumption also affect architectural designs.

When developing architectural designs, the aim is to minimize the impacts and damages caused by climate change and to design structures that can combat potential adverse effects. In this context, approaches such as durable buildings made with sustainable materials, energy-efficient designs, and green buildings have emerged.

Climate change has brought the responsibility of constructing more environmentally friendly and resilient buildings. Due to climate diversity, buildings are designed and constructed according to the climatic characteristics of the region in which they are built. Factors such as the materials to be used in the buildings, roof type, facade design, and insulation are considered. In this study, the design processes were compared based on the characteristics of the Mediterranean, Black Sea, and Continental climates. The characteristic architectural features developed under different geographical, cultural, and climatic conditions in these regions and the unique architectural identities shaped by local needs and resources were examined.

Keywords:

Climatic Design, Climate Change, Architectural Design, Energy-Efficient Designs.