

Risks of Climate Change on Buildings

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Abstract : Climate change risk impacts are one of the most challenging aspects that faces the built environment now and the near future. The impacts of climate change on buildings are considered in four different dimensions: physical, economic, social, and management. For each of these, the risks are discussed as they arise from various effects linked to climate change, including windstorms, precipitation, temperature change, flooding, and sea-level rise. For example, building assets in cities will be exposed to extreme hot summer days and nights due to the urban heat island effect and pollution. Buildings also could be vulnerable to water, electricity, gas, etc., scarcity. Building materials, fabric and systems could also be stressed by the emerging climate risks. More importantly the building users might experience extreme internal and external comfort conditions leading to lower productivity, wellbeing and health problems. Thus, the main aim of this paper is to document the emerging risks from climate change on building assets. An in-depth discussion on the consequences of these climate change risks is provided. It is expected that the outcome of this research will be a set of risk design indicators for developing and procuring resilient building assets.

Keywords : climate change, risks of climate change, risks on building from climate change, buildings

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