

## Effects of Climate Change on Built Environment in Lagos, Nigeria

Anthony Nkem Ede<sup>1</sup> (PhD), Kolapo Kayode Adeyemi<sup>2</sup> and Opeyemi Joshua<sup>3</sup>

<sup>1</sup>Department of Civil Engineering, Covenant University, Ota, Nigeria.

<sup>2</sup>Department of Civil Engineering, University of Ottawa, Canada

<sup>3</sup>Department of Building Technology, Covenant University, Ota, Nigeria.

Email: [anthony.ede@covenantuniversity.edu.ng](mailto:anthony.ede@covenantuniversity.edu.ng).

### ABSTRACT

Climate change has become one of the most exigent concerns of human race today. The effect of climate changes connected to human activities has become alarming since our ecosystem is not naturally adapting quickly to this phenomenon that depends on natural and human causes. As the key climate change indicators such as increasing temperature and intensity of rainfall are being verified in Nigeria, the consequent impacts of climate change connected to these symptoms are to be expected in Nigeria. With the increasing incidence of climate change related hazards and disasters, considerable damage to buildings and infrastructure is expected. Lagos being one of the largest/fastest growing cities in the world and the foremost manufacturing port city in West African sub region is chosen for this study. Its importance as the economic hub of Nigeria, its coastal position, the peculiarity of building development makes it an ideal State for the study of the impact of global climate change on Nigerian built environment.

This research uses statistical methods to analyze rainfall, temperature and structural failure data of Lagos State and postulates their impacts on constructed facilities in Lagos Cosmopolitan urban area. The results confirm the vulnerability of Lagos environment to climate change and the trend of the impacts of flooding on Lagos built environment.

**Key Words:** Climate Change, Built Environment, Building Collapse, Mitigation Approach