

# Challenges of Car Park Design in Nigeria

Anthony Nkem Ede (PhD), Peace Feyiyemi Adepoju and Paul Oluwaseun Awoyera

*Abstract—Problems of parking space in urban towns and in all places of large congregation is becoming a common issue around the world. Over the years engineers and architects have come up with a lot of solutions finding a way to create more parking spaces within minimum size of land by the design and construction of multi-storey car parks. This is line with the trend in modern cities all over the world of developing high-rise buildings as to overcome the challenges of urban over population, for optimal use of scarce land resources, as status symbol, etc. Standing on the advances made so far and the frequent problematics verified on existing multi-storey car parks, this research presents the design of a multi-storey car park for the mitigation of traffic challenges in public areas using Canaan land, Ota Nigeria as a case study. Canaan land, the seat of Faith Tabernacle in Ota, Ogun State of Nigeria is used as a case study because of the amount of vehicles that compete for parking space on Sundays or on other days of events. The research consist of the creation of the architectural drawings of the multi-storey car park with AutoCAD drafting and the modelling, structural analysis and design using the software Orion R16. The structural analysis and design were challenging but good results were obtained, approach for more innovative multi-storey car park identified.*

*Index Terms—Design, Multi-Storey Car Park, Structural Analysis, Traffic Challenges, Urbanization.*