

## The Role of Engineering in the Design of Kings of Carnival Costumes in Trinidad and Tobago

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(Received 24 April 2017; Revised 24 July 2017; Accepted 08 November 2017)

**Abstract:** *Information is lacking on the design process and key design issues faced by Kings of Carnival costume designers in Trinidad and Tobago. Unlike parade floats, Kings of Carnival costumes consist of large decorative pieces mounted on a three-wheeled frame that is moved around by a single masquerader who enacts a stage performance with the costume. To address this problem, a qualitative study was conducted through semi-structured interviews involving fifteen Kings of Carnival costume designers within the last three years. The study was sought to identify the design process used, extract the factors that influence the design of the costumes, examine the extent to which Engineering principles are utilised, and recommend strategies for improving the design process. Results indicated that engineering input was not utilised in the costume design process and material selection was based on tradition, availability and cost. Designers did not take into consideration the mechanical properties of materials during the construction of costumes. This resulted in a lot of trial and error during the construction and extremely heavy and uncomfortable costumes. External factors such as wind and rain were not being adequately addressed in the design process resulting in sub-optimal and unreliable designs. Recommendations to improve the design process include the implementation of a more rigorous design process, workshops to train designers in specific engineering tools that could be used, a modular costume design platform, revision of material selection and analysis of costume reliability to withstand unpredictable external loads. In addition, it is necessary to provide simple and accessible engineering support to local designers while easing their fears about keeping the art form intact and maintaining their creative edge.*

**Keywords:** *Carnival, costume design, design process improvement, Trinidad and Tobago*