

Alternatives Formation of Bricks Pattern from Trowulan through Parametric Design

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Abstract

This research is a continuation of the potential mapping from Trowulan Art and Crafts commodity based on its material which consist of Terracotta, Stone and Brass. Studies are limited to Terracotta and bricks as its products. Terracotta of Trowulan has a distinctive color texture and the product that based on this material are mostly sculpture, roofs tile, roofs ornament and bricks. Bricks are the most common material for building construction and being exposed in a common principles of bricks formation. This recent research aims to find an alternative principles of bricks formation through parametric design approach. The software that being used are Rhinoceros and Grasshopper plug ins. Product of studies are parametric script that enables designer to make a well calculated simulation and shorten the prototyping process. It is also implemented as design module or designs pattern that can be developed manually by handworkers.

Keywords: Parametrics, Designs Pattern, Products design, Terracotta.

Introduction

Trowulan district located in Mojokerto (East Java). Trowulan established around 1900. There are many artifacts and historic site that has been discovered and it gives an information about Trowulans ancient cultures and the Empire of Majapahit. Beside of its historic value as Majapahit Legacies, Trowulan also known as a place for handicraft. There are a cluster of artist that spread in different area that categorize based on 3 main material used which is terracota, stone and bronze. The category based on the facts that the majority of Majapahits artifacts that has been discovered was made out of these 3 materials. (Utomo et al. n.d.)

Based on Indonesian archeology definition, terracotta is a clay that has been through burning process. Among³ Terracota products there are form of figurine (both human and animal), temple models, traditional house models or detail of traditional house. Terracota products supports the economy of villagers. Beside of handicraft, bricks also a featured product from this district. Traditional bricks process, form and application still untouched by modern technology and design method. The bricks process are strongly depend on weather situation, form that was used mostly 240x115x52 (LxWxD) (Akmal 2010) in a box shaped and the application are mostly for buildings wall. Bricklaying formations still follow traditional formations or follow the standard construction of conventional bricks but its tectonics quality