

Werapong Nijlojkul 2010: Endurable Analysis of Buddha Model Using Reverse Engineering and Finite Element Method. Master of Engineering (Industrial Production Technology), Major Field: Industrial Production Technology, Interdisciplinary Graduate Program. Thesis Advisor: Mr. Apichart Chaengbamrung, Ph.D. 100 Pages.

This research uses the procedure of reverse engineering and the finite element method to study the strength of the Buddha image that will be built at Amphur Huay-Krajao, Kanchanaburi Province. The computer model of the Buddha image was created from a real original Buddha image by the reverse engineering and the computer aid design techniques. The finite element method was used to analyse the strength of the Buddha image that will be built. In the case of the strength analysis, the wind velocity data at the place where the Buddha image will be constructed was asked from the Meteorological Department of Thailand. This wind velocity data was used to calculate the force having an impact on the Buddha image because of the result of the exertion force which effect on the structure of the Buddha image is the force of the wind power. This wind velocity was converted to be wind force by using the standard of wind power calculation and the reaction of the Public Works Department. The results of strength analysis show that the maximum stress occurs at the ankle of the Buddha image. At the wind velocity of 33 m/s, the speed of the tropical storm occurring in Thailand, the value of the maximum stress is 0.37 MPa occurring at the ankle area of the Buddha image. This value of maximum stress cannot be a cause of collapsing of the Buddha image that will be constructed.

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