

Digital exhibition of conceptual product design? some experience with cooperative design projects

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Abstract

There are several conventional ways to exhibit the outcomes of conceptual product design, such as sketches, renderings, post panels, and models. In recent years, however, many multimedia software and tools have been available and are making a significant impact on industrial designers and their work. Those digital multimedia packages allow designers to quickly and creatively generate and exhibit design concepts. The characteristics of using electronic media can be summarized as follows: 1) to clearly demonstrate the consumer need for the product with story boards or scenarios, 2) to distinctly highlight the features of the product with its internal structures and external interfaces, 3) to allow testing of product usability by means of user-product interaction simulations, 4) to effectively and efficiently communicate with cooperated enterprises through online evaluation, and 5) to easily document and transfer the design information digitally. The authors have adopted a three-stage approach to exhibit the outcomes of conceptual product design projects with cooperated enterprises for several years in a Product Design course at National Yunlin University of Science and Technology (NYUST), Taiwan. This paper reports the authors' experience in specific and discusses the implications and recommendations of digital exhibition of conceptual product design in general.

Keywords

digital exhibition, conceptual product design, cooperation with enterprise

DECORATION PATTERNS INFLUENCED BY DYNAMIC CHARACTERISTICS

A RELATIONSHIP BETWEEN THE CARVED PATTERNS AND THE STRESS DISTRIBUTIONS OF THE DECORATED BEAMS OF JAPANESE TEMPLES AND SHRINES

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Abstract

This study aimed to investigate the dynamical characteristics of the decorated beams of Japanese temples and shrines to find out the relationship between the dynamical characteristics and the decoration pattern carved on the beams. It was assumed that the carved patterns: KARAKUSA that have been carved traditionally by professional carvers on the decorated beams might be affected by a latent dynamism. The decorated beams called as "KOURYO" were investigated to elucidate a relationship between the KARAKUSA patterns and the stress distributions under normal gravity conditions of the decorated beams. The contours and the patterns of the decorated beams were collected through field surveys.

And, the stress distributions of the beams were calculated by using a structural analysis application: FEM. Besides, an interview with a professional carver of the KARAKUSA patterns was carried out in order to find out how the carver would be influenced by the latent dynamism when he carved the patterns. And, the structural analyses were carried out to the thirteen decorated beams: TOSYOGU at Ueno Tokyo, HOKEYYOU temple at Chiba and so on. As a result, the directions of which the carved patterns developed from the end to the midpoint of the beams almost coincided with the directions of the distribution of the stresses predicted in the beams. Furthermore, it was suggested that the tangential directions of the patterns would almost coincident with the directions of the stress principal axes at the stress observation points on the beams. Finally, it was confirmed that the KARAKUSA patterns might be indirectly but strongly affected by the stress distribution, which could never be directly sensed through the carvers' eyes.

Keywords

Dynamic characteristics, Carved pattern, FEM