Compassion: Essence of Beauty from Triunity of Bridge-CAD

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Abstract

In the research process of bridge-CAD, through the analysis of the results from penman's new concept for bridge trinity, it is concluded that the essence of beauty is compassion originally being "karun!a" in Sanskrit, and this conclusion is primarily verified. This study is of positive significance to the cultural self-confidence of Chinese nation.

key words: bridge-CAD; triunity; essence of beauty; compassion; cultural self-confidence

1   Introduction

In his conclusion on the nature of beauty, "beauty is difficult", the Aesthetics of Bridge Design [1] states the condition of Socrates' judgment on the nature of beauty 2400+ years ago: "This beauty itself, when added to anything, makes that thing beautiful".

2   The Trinity of Bridge CAD: The nature of beauty is compassion

In his "Ten Books on Architecture" [2], Vitruvius pointed out the three attributes of architecture: solid, useful, beautiful. As a kind of architecture, the Department of Bridge Engineering of Tongji University is a trinity of the School of Civil Engineering, the School of Transportation Engineering, and the School of Architecture and Urban Planning, and it is quite trinitarian.

In order to analyze the trinity of bridge CAD and based on the overpass as the main bridge type, I proposed a new concept: あ =Wichtigkeit (Shape/Function)=Vitruvian3/(Vitruvian2, Vitruvian1), the parameter あ is the ratio of the importance of the bridge components or even the shape of its collection compared to its function ∈ [0 ,1], Vitruvian3|2|1 corresponds in turn to the 3rd|2|1 attributes of the building, i.e., aesthetics, suitability, and robustness. Take the prestressed concrete box girder as an example, the あ values of the prestressing bundles outside the box, inside the box and inside the ribs are about 1, 0.5 and 0. Then take the Beijing Xizhimen Interchange as an example, it has a large functional defect in traffic engineering, so it can be seen that its Vitruvian2 is not valid, i.e. Vitruvian2=0.

If any one of the Vitruvian1|2 properties does not hold, the Vitruvian3 property is meaningless, i.e., あ $= \infty = x/0 =$ Vitruvian3/(Vitruvian2, Vitruvian1). According to Koo's words, "the whole life of Chinese people is an emotional life", and the West believes that 'love' is the highest emotional state, so we might as well emotionalize the 3 attributes of architecture: solidity, applicability, and beauty, and based on what Venerable Hong Yi said "Love is compassion". The author believes that: the nature of beauty is also compassion, compassion in line