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Preserving Ceramic Heritage Values through Sustainable Design

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ABSTRACT

In recent time, the conservative approach of preserving ceramic heritage wares is facing complex problems. Due to its fragility, mechanical damage causes irreversible deterioration such as breaks, surface abrasion, cracks, and sometimes completes fragmentation of the body. Thus, sustainable approach is seen as a possible and potential alternative for preserving ceramic heritage values. Sustainable concept involves transforming heritage values into commodities that have significant contemporary values. Hence, this study seeks to explore the viability of sustainable development concept in preserving ceramic heritage values. Using Kelantan traditional ceramics as a case study, the paper identifies the unique heritage values (aesthetic qualities) that can be sustained as genius loci. This was achieved by analysing the decorative motifs on heritage wares using Golden section; after which the unique elements were integrated into contemporary ceramic products. The products were evaluation and the result shows that; applying this approach in ceramics will not only sustain the heritage values, but also enhance contemporary products.

Key Words: Ceramic heritage values, Heritage preservation, Sustainable design.

1. Introduction

Heritages are inherited traditions, monuments, objects and culture; they are unique and irreplaceable; thus, their preservation demonstrates a recognition of the necessity of the past and of the things that tell its story (Tanselle, 1998). One of the major unique attributes of tangible heritage is the aesthetic value. According to Michael (1998), aesthetic is a critical reflection on art, culture and nature. It is commonly known as the study of sensory or sensory-emotional values, sometimes called judgments of sentiment and taste (Zangwill, 2007). It deals with the nature of art, beauty and taste, with the creation and appreciation of beauty. Although, aesthetic judgments may be cultural conditioned to some extent; however, the judgments of aesthetic value clearly rely on our ability to discriminate at a sensory level. That is, being able to identify and appreciate good aesthetic values when seen or touch (feel).

In recent time, the conservative approach of preserving ceramic heritage wares is facing complex problems. Conservation in ceramics is a process of preserving and protecting ceramic objects of historical and personal values. Conservative approach is in two distinct areas; passive and active conservation. Passive conservation is a non-interventive type where objects are protected from decay by controlling the surrounding environment. However, it is the nature of all composite materials to eventually degrade into their basic

constituents (Susan & Victoria, 2007). In the case of ceramics, degradation occurs as a result of material ageing, environmental actions, global and local pollution and climate change (Amoeda, Lira, & Pinheiro, 2012). Although chemical degradation in ceramic may be slow, but mechanical degradation are often rapid. Their fragility makes them very susceptible to mechanical shock which results in breaks and chip; thus, handling has been a major threat to ceramics museum environment (Susan & Victoria, 2007).

Active conservation involves intervening the damaged object using treatments that stabilized and stops the deterioration (Susan & Victoria, 2007). In some circumstances where ceramic wares are highly valued (probably due to artistic or religious merit); some form of repair and restoration of damaged objects may have developed. Although the precise time when repair to ceramic wares started is unknown; however, (Williams, 1988) recorded that the oldest repair by the British museum started around 7000BC.

The commonly used materials for repairing artefacts towards the early nineteenth century are starch paste, natural gums and resins, protein binder, bee waxes (Horie, 1987). However, many of these repair materials are only affective for short term and some even caused further damage to the object. Thus, today's conservators have an ethical principle of just minimizing the overall impact of damage and treatment. Due to the possibility of further damaging an object during any intervention, conservators carry out treatment only when deemed necessary (probably to prevent further damage). Hence, with this current trend and challenges facing conservative approach; sustainable approach is seen as a possible and potential alternative for preserving ceramic heritage values.

2. From Conservative to Sustainable Approach

Sustainable development is a widely used idea that has many different meanings; however, in broad terms, sustainable development concept is an attempt to combine growing concerns about a range of environmental issues with socio-economic issues (Hopwood, Mellor, & O'Brien, 2005). According to Smith & Rees, (1998), sustainable development meets the needs of the present without compromising the ability of the future generations to meet their own needs. It is a state in which all humans, now and in the future can live at a decent level of well being within the limits of what nature can and continue to provide (Salama, 1995).

In a global context, heritage has become one of the key aspects for the enlargement of sustainable development concepts. Thus, heritage has been established to have a profound relationship with culture, economics, environment, and social aspects (Green lines Institute, 2013). The concept of sustainable development in heritage involves holistically meshing the knowledge of the new with the old in creating contemporary values that respects and preserves culture, environment and history of the society that produced them (Almatarneh, 2013; Rashid & Amat, 2008). It involves transforming heritage values into commodities that have significant contemporary values; this can be achieved by incorporating unique elements on heritage wares into contemporary products.

Although, the concept is still very new in ceramic heritage; however, in areas such as architecture and furniture design, heritage sustainability has been applied where elements of heritage values in traditional designs were integrated into contemporary designs (Almatarneh, 2013; Aziz & Olalere, 2013; Rashid & Amat, 2008). Thus, the research aimed to explore the potential of sustainable concept in enhancing and sustaining ceramic heritage values.

3. Study

To verify and validate the potential of sustainable concept in enhancing and sustaining ceramic heritage values, a case study was performed using Kelantan heritage ceramics. The

study includes three (3) stages; Identifying heritage values, product designing and heritage integration and product evaluation.

i. *Identifying heritage values*: At this stage, unique decorative motifs on Kelantan heritage wares were analyzed and identified using PhiMatrix™ software (Fig. 1).

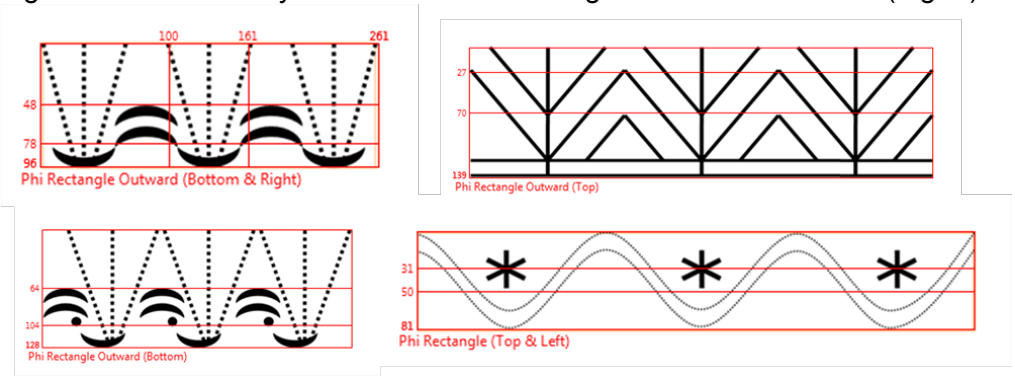

Figure 1: Traditional motifs on Kelantan heritage ceramics

PhiMatrix™ is a design and analysis software application that unveils the beauty, harmony and balance of nature's proportion in a design or artwork ("PhiMatrix™ Overview," n.d.). It applies Phi proportion (Phi: 1); where Phi is a rational number (1.618…) derived by using Eq. 1. The Phi relationship, also known as Golden ratio/section and divine proportion, are found throughout life and nature.

$$\text{Phi } (\Phi) = \frac{1 + \sqrt{5}}{2} = \mathbf{1.618....} \text{ (Irrational number)} \quad (1)$$

ii. *Product Designing and Heritage Integration*: Two (2) handle-free ceramic mugs were designed using Solidworks software (Fig. 2a). The heritage motifs identified were then applied as surface decoration on the products (Fig. 2b).

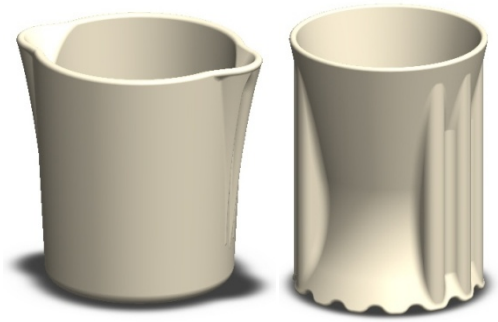

Figure 2a: Handle-free mugs

Figure 2b: Mugs with heritage motifs

iii. *Product Evaluation*: the designs were evaluated at this stage to identify the influence of heritage motifs on aesthetic experience. This was achieved through a survey; the design with motif on the surface and design without motif were placed side-by-side (Fig. 3). Respondents were asked to select design they found most appealing. 104 people participated, from which 16% are in Art and design profession. 64% of the respondents are age ranging between 25 and 35 years old while 21% are between 36 and 55 years old.

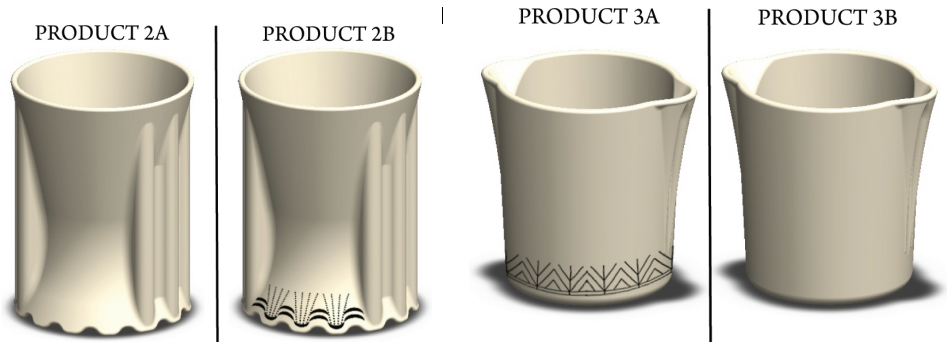

Figure 3: Product 2 & 3

Result: Out of the total 104 respondents, more than half of the respondents (62% for Product 2A and 76% for Product 3B) selected the designs with heritage motif (Product 2B) as most appealing (Table 1 & 2).

Table 1: Analysis of the responses for Product 2

Answer	Bar	Response	%
PRODUCT 2A		17	16%
PRODUCT 2B		64	62%
NONE		23	22%
Total		104	

Table 2: Analysis of the responses for Product 3

Answer	Bar	Response	%
PRODUCT 3A		79	76%
PRODUCT 3B		3	3%
NONE		22	21%
Total		104	

4. Discussion and Conclusion

The result from the study shows that the integration of motifs on ceramic products has a positive influence on the product aesthetic experience. The presence of aesthetic values (motif) on product influenced how users perceive and appreciate product. Although, aesthetic judgments may be cultural conditioned to some extent; however, the judgments of aesthetic value clearly rely on our ability to discriminate at a sensory level. That is, being able to identify and appreciate good aesthetic values when seen or touch (feel). Therefore, since the two products were evaluated based on one sense (sight), further study will develop the physical ceramic products and re-evaluate based on sight and touch senses. This will give room for comparison and validation of findings.

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