



Swan Pattern as in Stucco Decoration on Prang, from Worship Flowers at Wat Chulamani in Phitsanulok Province, Thailand

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Abstract

This study aims to 1) study the patterns of stucco decoration on Prang of Wat Chulamani, Phitsanulok Province; 2) explore the process of transforming and forming products from worship flowers; and 3) propose a guide to developing souvenir products in the patterns of stucco decorated on Prang, from worship flowers at Wat Chulamani, Phitsanulok Province. It uses qualitative research methodology including a study of historical information and field records, along with an experimental study on materials. The results suggest that the unique patterns of stucco decoration on Prang at Wat Chulamani is a row of Hong Karb Mala (Swan catching bouquet), appeared at their sides, walking in a row, with a bouquet in their mouth, their tail in Kanok pattern, and a range of floral patterns all around the Prang. The process of transforming and forming worship flowers into products suitable for extended development as souvenir products was to bring the dried flowers to the experiment in the forming process using both dried flowers or dried flowers powder, ideally with Formula 3 in a ratio of glue powder: water: dried flowers as 10: 5: 1. The resulting workpiece had its surface showing the appearance and uniqueness of worship flowers. The SCAMPER technique was applied to design Hong Karb Mala and floral patterns as in the stucco decorated on Prang of Wat Chulamani, Phitsanulok Province, which could be developed as souvenir products. Sketch 2 was found suitable to be developed as souvenirs as it harmonized with the worship flowers in the forms of a decorative picture frame and keychains.

Keywords: Hong Karb Mala (Swan catching bouquet), Stucco pattern, Wat Chulamani, Worship flowers

Introduction

Wat Chulamani is one among the important and ancient historical sites in Phitsanulok Province. It is located in the administrative area of Moo 2, Tha Thong Subdistrict, Mueang District, Phitsanulok Province. Krom Phraya Damrong Rajanubhab assumed that Phra Prang at this temple was built during the time when the Khmer Empire had been in power and the temple area was believed to be the original location of Phitsanulok city. The stucco decoration on the Prang is regarded as precious sculptures representing the style and features that had been passed down as evidence of the thriving arts (Trakul, 2002). The stucco decorations are unique and distinct especially Hong Karb Mala (swan catching bouquet) unlike anywhere else and the meticulous and delicate floral patterns very common in the Lanna art. They differ from those traditional Prang decorations of the Sri Ayutthaya period.

The decorations were carried on from the previous constructions in the original model of Khmer Prang around the early 19th century (Buddhist Era) at Lopburi and was passed on to Ayutthaya in the 20th Buddhist century prior to the Prang of Wat Chulamani (Santi, 1996).



Figure 1 Prang at Wat Chulamani, Phitsanulok Province

Wat Chulamani is a sacred place that is significant for Buddhists as they give respect and have faith and come to worship for their good fortune, especially on auspicious Buddhist days. The important offerings for Buddhists to express their respect and faith are fresh flowers that bloom beautifully which are offered to this sacred place with a heart of great pleasure. Buddhist ideology mentioned about the belief of using felicitous flowers in religious ceremonies with an aim to enhance the propitiousness and sanctity of the ceremonies, and that, the belief began to spread and increased popularity among the general public, as a way to strengthen positive energy and flourish mentally (Chanatip, 2021).

Over time, these flowers withered and decomposed and their beauty turned into something decayed and ugly with a loss of value, beauty, shape, and colour, and finally becomes waste which ultimately affects and pollutes the environment. Phitsanulok Provincial Office of Local Administration (2021) reported the amount of solid waste generated in Phitsanulok Province in the fiscal year of 2021 (October 2020 - June 2021) for a total of 196,567 tons consisting of organic waste (biodegradable waste) at the top level of 113,456 tons.

This research valued these fresh flowers as worship offerings and proposed an idea to the experiment of transforming and developing these starting materials into products or souvenirs that represent the distinct identity of stucco decorations on Prang of Wat Chulamani. It not only generates added value to these worship flowers but also promotes the wisdom and culture of Phitsanulok Province.

Objectives

1. To study the patterns of stucco decorated on Prang of Wat Chulamani, Phitsanulok Province
2. To examine the process of transforming and forming products from warship flowers.
3. To propose a guide to developing souvenir products in the patterns of stucco decorated on Prang, from worship flowers at Wat Chulamani in Phitsanulok Province

Expected Benefits

1. The features and patterns of stucco decorated on Prang of Wat Chulamani, Phitsanulok Province

2. The process of transforming and forming products from worship flowers suitable for product development.
3. The prototypes of souvenir products in the patterns of stucco decorated on Prang, from worship flowers at Wat Chulamani in Phitsanulok Province

Concept and Theories

The product design employed the Eco-Design with the 4 R principles including Reduce: Reduced the use of resources in various stages of product life cycle; Reuse: Repeated use of parts of products or used products; Recycle: Reprocess parts of products or products in the destruction stage for reuse; and Repair: Products made for easy maintenance to prolong the use life (Thapanut, Sarawut, and Jariya, 2020).

The design approach of the SCAMPER technique is to seek solutions to generate new ideas or products which was applied in the design of souvenir products. The technique consisted of these letters: S = Substitute is to replace; C = Combine is to integrate or synthesize; A = Adapt is to adjust the design; M = Modify/Magnify is to minimise, mitigate, or alter; P = Put to another use is to use in a different way; E = Eliminate/Elaborate is to remove or simplify; and R = Reverse/Rearrange is to flip or reorganize (Atikhun et al., 2021).

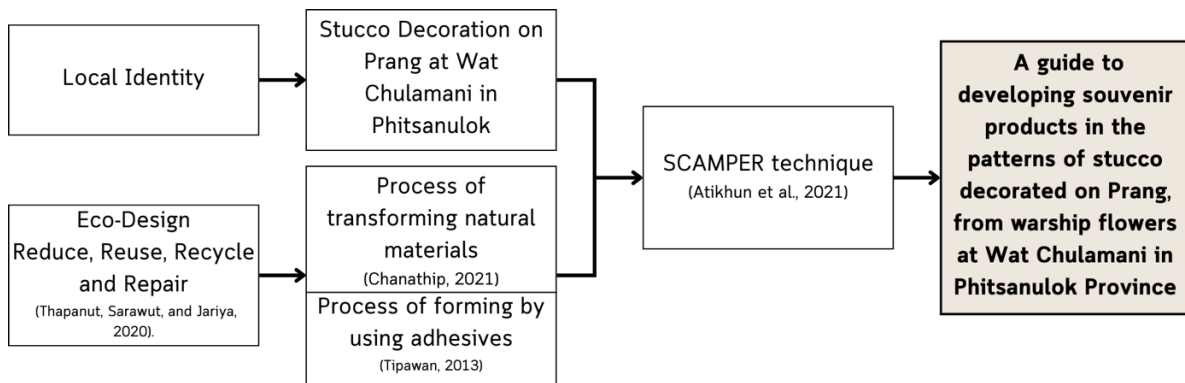


Figure 2 Conceptual Framework

Research Scope

Scope of contents

1. Information from documents, textbooks, and related research.
 - 1.1 Features and patterns of stucco decorated on Prang of Wat Chulamani, Phitsanulok Province
 - 1.2 Process of transforming and forming natural materials
 - 1.3 Design of souvenir products
2. Information from field survey to explore the patterns of stucco decorated on Prang of Wat Chulamani, Mueang District, Phitsanulok Province.

Scope of research instrument

1. Record form for the experiment to transform worship flowers
2. Record form for the experiment to form worship flowers

Scope of research site

Wat Chulamani, Tha Thong Subdistrict, Mueang District, Phitsanulok Province

Definition of Terms

1. Hong Karb Mala refers to the pattern of swan catching a bouquet of flowers as appeared on the stucco decorated on Prang of Wat Chulamani, Phitsanulok Province
2. Worship flowers refer to flower bouquets or flower garlands that were offered for the worship in Wat Chulamani, Phitsanulok Province, which in here were marigolds.

Methodology

1. Study on the patterns of stucco decorated on Prang of Wat Chulamani, Phitsanulok Province

1.1 Investigate and search information from documents, textbooks, and research related to the patterns of stucco decorated on Prang of Wat Chulamani.

1.2 Field visit to explore the patterns of stucco decorated on Prang of Wat Chulamani; collect data and record as photographs (Figure 3).



Figure 3 Patterns of stucco decorated on Prang of Wat Chulamani

2. Examination on the process of transforming and forming worship flowers into products.

2.1 Investigate and search information from documents, textbooks, and research related to the process of transforming and forming natural materials using the Eco-Design concept.

2.2 Experiment with the process of transforming and forming worship flowers, and record data using an experiment record form.




Process of transforming worship flowers

The experiment was done to maintain the beauty of flowers with the method of drying so as to express their beauty and a scent of worship flowers (Chanathip, 2021), choosing marigolds for the experiment as they are commonly used in the form of garlands to offer to monks (Figure 4), as shown in Table 1.



Figure 4 Viharn of Luang Pho Phet, Wat Chulamani, Phitsanulok Province.

Table 1 Experiment of the process to dry warship flowers

| Time of Experiment | Before the Experiment | 2 Days | 7 Days |
|--------------------|--|---|--|
| Picture |  |  |  |
| Appearances | Bright yellow petals, very high moisture, soft petals | Darker coloured petals, moderate moisture, petals starting wither, smaller size | Petals without moisture, dry and firm, smaller size |

Process of forming worship flowers







The experiment with the process of forming worship flowers was derived from the study of local wisdom to create pollen Buddha images in Lan Na that reflected the culture, value, and meaning of objects as a symbol of faith (Tipawan, 2013). The raw materials used included dried worship flowers, wood glue powder, and clean water.

The experimental steps (Figure 4) are as follows: 1) Prepare dried flower powder by chopping or grinding dried flowers into small pieces, 2) Mix wood glue powder, clean water, and dried flowers or dried flower powder using each formula and ratio as shown in Table 2 and blend them well, 3) Pour the mixture into the mould and wait for it to dry. Remove the workpiece from the mould. The details of the experiment are shown in Table 2.



Figure 5 Experiment of forming worship flowers

Table 2 Experiment of forming worship flowers

| Formula | Dried Flowers | Dried Flowers Powder | Appearance |
|--|---|--|--|
| Formula 1 40 g of glue powder 20 g of water 1 g of dried flowers |  |  | No bubbles in workpiece Dried flowers appeared very slightly |
| Formula 2 40 g of glue powder 20 g of water 2 g of dried flowers |  |  | Small number of bubbles in the workpiece Dried flowers obviously appeared |
| Formula 3 40 g of glue powder 20 g of water 4 g of dried flowers |  |  | Large bubbles in workpiece Dried flowers appeared largely in petal form |

3. Proposing a guide to developing souvenir products from worship flowers in the patterns of stucco decorated on Prang of Wat Chulamani, Phitsanulok Province.

3.1 Design sketches of souvenir products from worship flowers in the patterns of stucco decorated on Prang of Wat Chulamani, Phitsanulok Province, using SCAMPER technique.

Three sketches for souvenir products (Figure 6) combined the swan catching bouquet with floral patterns as they both are unique patterns of stucco decorated on Prang of Wat Chulamani. A sketch was selected to further develop the concept into souvenir products in harmony with the belief in worship with flowers, which includes decorative picture frames and keychains, using a computer program to create 3D models (Figure 7).



Figure 6 Three sketches of pattern design for souvenir products

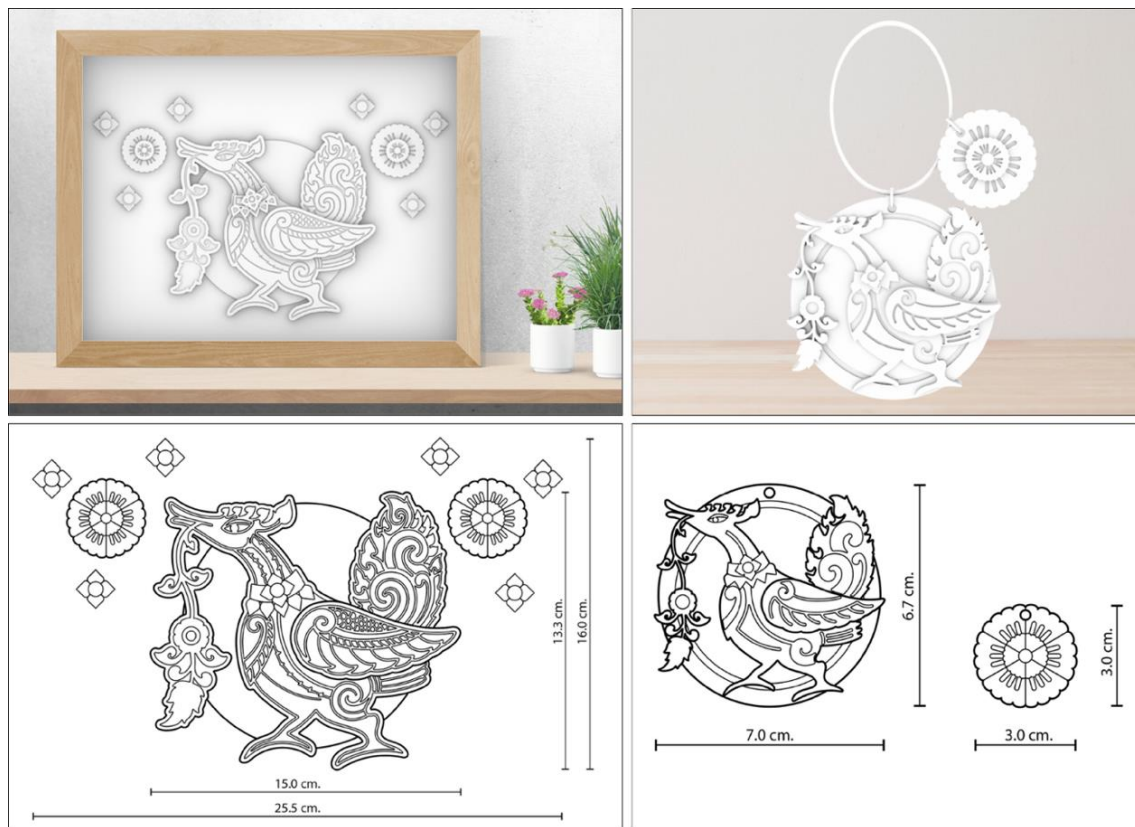


Figure 7 The 3D models of souvenir products

3.2 Create prototypes of souvenirs in the patterns of stucco decorated on Prang from worship flowers at Wat Chulamani so as to guide product development.

The steps to create souvenir products in the patterns of stucco decorated on Prang, from worship flowers at Wat Chulamani were 1) creating product prototypes, 2) making silicone rubber moulds, and 3) forming products with worship flowers.

1) Create the prototypes for casting moulds by printing sample workpieces of souvenir products created by a computer program with a 3D printer as shown Figure 8. The material used for printing is PLA (Polylactic Acid) as biological plastic produced from natural materials and biodegradable.



Figure 8 Printing sample workpieces with a 3D printer.

2) Make silicone rubber mold by placing the prototype into a frame, apply a thin layer of vase line or oil to the template to prevent it from sticking to silicone rubber. Mix well the silicone latex and accelerator well and pour into the prepared frame, wait for it to dry and then remove the silicone mold from the prototype, as shown in Figure 9.



Figure 9 Making a silicone rubber mold

3) Forming products of worship flowers by preparing raw materials of glue powder, water, and dried flowers or dried flower powder; mixing them in the ratio of experimented formula and pouring into silicone rubber mould; waiting for it to dry and removing the workpiece from the mould; and finally retouch the details and rims of the workpiece, as shown in Figure 10.



Figure 10 Forming the product of worship flowers

Results

1. Study on the data and field survey of the Prang of Wat Chulamani, Phitsanulok Province

Study results found that the stucco decorated on Prang had distinctive and unique patterns of Hong Karb Mala (swan catching a bouquet) appeared by their sides, walking in a row with a bouquet in their mouths, and the tail of beautiful curved Kanok pattern. Each of the swans differs in features. Two types of swan patterns were found (Figure 11), the one with proportional size, high and low relief, lithe patterns; and the other one with a relatively long neck and more simple pattern than the first one. There were also floral patterns (Figure 12) including flowers, bouquets, leaves, and curved vines of various styles assembled around the Prang.



Figure 11 Stucco decoration on Prang in Hong Karb Mala pattern (Swan catching bouquet)



Figure 12 Stucco decoration on Prang in floral patterns

2. Study on the process of transforming and forming products from worship flowers

The process of transforming and forming products from worship flowers that is suitable for further development into souvenir following the experiment. In the experiment to transform worship flowers using the drying method suggested that after the marigolds as the worship flowers were completely dried taking about 7 days, they were brought to the forming process which can be done for both the dried flowers and the dried flowers powder. Formula 3 was found to be the ideal formula with a ratio of glue powder: water: dried flowers as 10: 5: 1. The resulting sample workpiece had its surface clearly showing the features, uniqueness, and beauty of the worship flowers.

3. Proposing a guide to developing souvenir products from worship flowers in the patterns of stucco decorated on Prang of Wat Chulamani in Phitsanulok Province

Study results suggested the application of SCAMPER technique to design Hong Karb Mala and floral patterns as in the stucco decoration on Prang of Wat Chulamani in Phitsanulok Province, providing the designs that can be developed into souvenir products. Considering the 3 sketches of patterns, Sketch 2 was found to be suitable for further developing into souvenir products in harmony with the worship flowers, which included 2 types as decorative picture frame (Figure 13) and keychains (Figure 14).



Figure 13 Prototype of souvenir picture frame with patterns of stucco decorated on Prang, made from worship flowers at Wat Chulamani

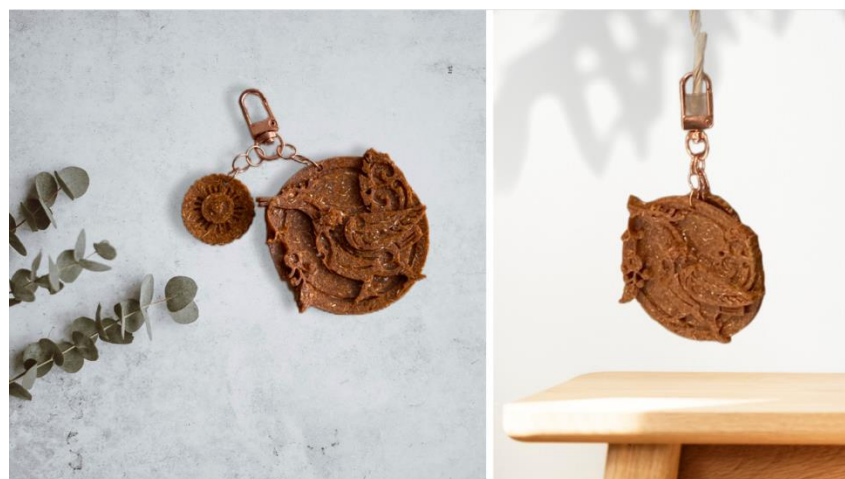


Figure 14 Prototype of souvenir keychains with patterns of stucco decorated on Prang, made from worship flowers at Wat Chulamani



Discussion

The Prang of Wat Chulamani in Phitsanulok Province was decorated with a distinctive and unique pattern of stucco namely Hong Karb Mala (Swan catching bouquet). According to Trakul Roykaew (2002), such a swan pattern had the beauty in Thai style better than those in other temples, and without repetition of the patterns, showing the artists' independent ideas. Two forms of swan patterns were found which agreed with Santi Leksukhum (1996) stated that the swan patterns were characterized by 2 different appearances. One is the swan pattern created by skilled craftsmen, that had proportionate size, nicely extended neck, continuation of the pattern in rhythm and dimensional deep-relief. Another one, assumed to be the swan pattern created by apprentice craftsmen, had a relatively long neck, and the comb, wings, and tail made by scratching cement to create patterns that differed from the first one.

The process of transforming and forming products from worship flowers applied the 4Rs principles that conform to the conceptual framework of a study based on the Eco-Design principles as mentioned by Thapanat Kaewpan, Sarawut Itsaranuwat, and Jariya Plangnok (2020), comprising Reduce, Reuse, and Recycle. The worship flowers or marigolds as the garlands offered by Buddhists at Wat Chulamani in Phitsanulok Province were brought into the production process for their reuse, including the principle of repair by using an experimental process to obtain a product that is sturdy and durable to extend its lifespan.

Product development as souvenirs in the patterns of swan stucco decorated on Prang, made from worship flowers at Wat Chulamani in Phitsanulok Province applied the local identity in combination with the SCAMPER concept to design souvenir products. In this way, the products not only represent the local distinctive identity but also tell the stories about worship flowers as materials used in the production. Atikhun Layraman et al. (2021) stated that the design of local souvenir products needs to take-into account the precious cultural identity of each locality in order to create a charming and contemporary product that tell the story and history of a particular product. Technology may be used to create a prototype and help to make the product look contemporary and attractive.

Recommendations

1. Stucco sculptures decorated on Prang of Wat Chulamani in Phitsanulok Province are in many other beautiful and interesting patterns including Hong Karb Mala created by apprentice craftsman, Chinese curved frame, Fueng Uba, Phun Prueksa, for example. Designers or interested persons can apply these patterns in their designs of jewellery or other types of products as well.

2. The process of transforming and forming products from worship flowers can be experimented with other natural materials within the locality as well as other types of waste materials.

3. The model souvenir product is one approach to product development that can be incorporated into the study of market and consumer trends or the design trends each year for commercial production.



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