

APPLICATION OF FRESH STUCCO IN CREATIVE PRODUCT DESIGN

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ABSTRACT

The objective of this research is to study the properties of fresh stucco and experiment with the molding of fresh stucco to be applied in the design of creative products. By studying information about the Inherited Wisdom of Phetchaburi Craftsmen, various molding techniques for use in product design are sourced from various sources, such as books, theses, research articles, journals, and online media, as well as field visits in Phetchaburi province for the exploration and study of fresh stucco materials. I analyzed, experimented, and found that the mixed side of the fresh stucco consists mainly of lime, followed by sand, fiber, leather glue, and jaggery. Jaggery is a unique ingredient in Phetchaburi Craftsmen's fresh stucco material, as it is a local material that is readily available in the central region. It acts as an adhesive to make the fresh stucco material sticky and gives a soft white color when the fresh stucco dries. The appearance of the fresh stucco is off-white, the texture of the mortar is sticky and smooth, and when you try to hold it, the texture of the fresh stucco will be soft and can be used for molding. Easy to press or squeeze. In terms of toughness, it has properties derived from leather glue and jaggery, allowing it to be molded and bonded together during work. The texture of the fresh stucco will be even harder. The process of forming unstructured fresh stucco materials using compression techniques. Because the fresh stucco material has the properties of toughness and softness, it is easiest to use extruded molds for molding, and the pattern that comes out each time is as similar as possible.

This is a design that uses fresh stucco materials to change the context of materials that were originally used to create sculptures and decorate religious places into products that can reach people today. In terms of toughness and softness, the design uses mold-pressing techniques and product styles.

Keywords: Creative Product, Fresh Stucco, Phetchaburi Craftsmen

INTRODUCTION

Materials are another way to differentiate product design, with designers now adopting the principle that form follows material as a design issue. Most of them are due to the discovery of manufacturing techniques, especially new molding techniques for traditional materials or local materials that are unique to that locality that can be applied to the design to make the product more attractive. (Nattani Niamsap, 2018 : 19) Nowadays, local materials, or materials derived from wisdom, are used in product design. This is in line with the trend of creative cities, which combine community arts and culture with technology based on existing resources. (Khanin Phriwanrat, 2020) In addition to creating uniqueness for the product, it also preserves wisdom.

Fresh Stucco is a local material that has been used to create Thai art since ancient times, also known as Fresh Stucco art. The fresh stucco contains lime as the main ingredient. It is pounded with sand, fibers, glue, and local materials such as sand. In Phetchaburi craftsmanship, jaggery is commonly used to increase the adhesion of the fresh stucco and make the color of the fresh stucco a uniform off-white color. The properties of the fresh stucco can

be formed into various shapes that are desired, and when the fresh stucco is exposed to air, it will solidify on its own. The more time passes, the stronger the fresh stucco will become. (Phichit Nimngam, 2007 : 1-41. Noppadon Sangwalpetch, 2019.) With such features, Therefore, fresh stucco is considered an interesting material and can be used in the design of the product.

As the above data shows, creative products are gaining popularity, so a good design should not only take into account functionality. Making a product attractive by choosing materials that can create an identity for the product is therefore a priority to consider. Therefore, the designer had the idea to use fresh stucco as a material in product design in order to preserve the unique material of Thailand for the new generation to see and know better.

OJECTIVES

1. To study the properties of fresh stucco and molding techniques for use in product design.
2. To experiment with the molding of fresh stucco materials.
3. To design products from fresh stucco

RESEARCH SCOPES

Content Scope

Study the properties of Phetchaburi fresh stucco and molding techniques from Phetchaburi fresh stucco

Area Scope

Phetchaburi Fresh Stucco Technician Group

METHODOLOGY

Step 1: Study information about Phetchaburi Fresh Stucco and various molding techniques for product design by studying various sources such as books, theses, research articles, journals, online media, and field visits in Phetchaburi province.

Step 2: Experiment with the Fresh Stucco molding process for product design

Step 3: Design and Development

- 1) Design concept summary
- 2) Sketch and develop designs
- 3) Drawing for production
- 4) Produce product prototypes

RESULT

Analysis of data on Fresh Stucco

The mixture consists of five materials: lime, sand, fiber, leather glue, and jaggery, with the ratio as shown in Table 1.

Table 1: Mixture of Fresh Stucco

material	picture	ratio
lime		7
sand		5
fiber		2
Leather glue		1
Jaggery		1





source : Chatchawan Sahassaphat. (2018). Phetchaburi craftsmen. Interview, 20 October.

The most prominent characteristics of Fresh Stucco include its off-white color, as it is a material with all-natural ingredients, which is off-white from lime that is the main ingredient, along with animal skin glue and jaggery, so off-white is the most unique color of Fresh Stucco in Phetchaburi province.

Qualifications Fresh stucco has the property of being tough and formable. It is malleable, but when the fresh stucco is allowed to be exposed to air, it will harden, and the more time passes, the harder the fresh stucco will be. The most prominent properties of lime are strength, since in the mixture of lime there is lime. Sand, fiber, and glue When the fresh stucco is allowed to dry and more time passes, the fibers decompose naturally, resulting in small pores within the stucco and allowing air to pass through them.

In terms of molding, a wire frame is wrought into shapes and plastered, followed by fresh stucco to create the workpiece. By the nature of floating molding If it is a piece that is not very large, Pieces can be created without structure.

Table 2: Molding experiments

format	advantage	weakness
Structured 	<ul style="list-style-type: none"> - Strong - Able to add structure 	<ul style="list-style-type: none"> - Quite heavy. - The production method is quite difficult.
Unstructured : With compression 	<ul style="list-style-type: none"> - Easy to produce - Smooth and shiny surface - Repeatable 	<ul style="list-style-type: none"> -Air bubbles often form during compression. -The resulting format does not have much dimension.
Unstructured : With press 	<ul style="list-style-type: none"> - Can be reproduced in bulk - The surface is quite smooth. 	<ul style="list-style-type: none"> - There is a cumbersome process for preparing for production.
Unstructured : With molding 	<p>The resulting format is very dimensional.</p>	<ul style="list-style-type: none"> -There is a rather difficult method of production. -Time-consuming -The resulting pattern is not static.

From the table of molding experiments, it was found that the strongest forms were structured molding, suitable for forming large pieces, and pressing or mold molding, suitable for forming small workpieces.

A summary of the guidelines to be applied in the design includes:

- 1) The materials used are Phetchaburi Fresh Stucco.
 - 1.1) The distinctive features of the Fresh Stucco used in the design are off-white.
 - 1.2) The notable properties of the fresh Stucco used include strength.
- 2) The patterns obtained from the experimental molding analysis include compression techniques suitable for small products.

Design Concept

Products used as prototypes include desk products. There is a concept called flip, which is to modify the use of the product to be convenient and in line with the work of people today who have problems with storing and using things on their desks. In addition to using the product on the desk, it also changes the context of fresh stucco materials, which are an alternative for people working today to know and access them more easily.

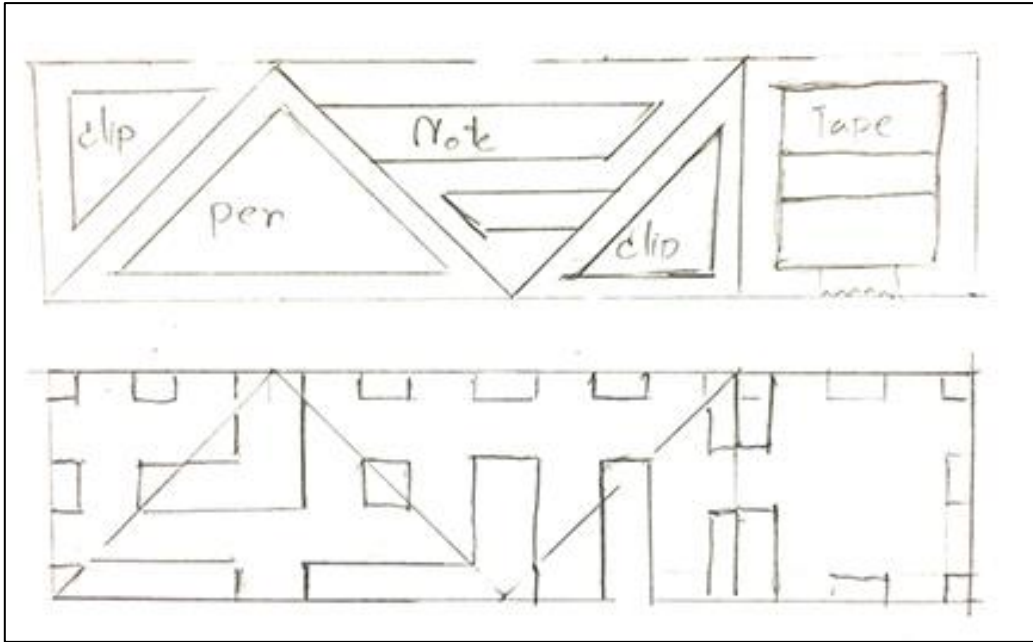


Figure 1. Sketch

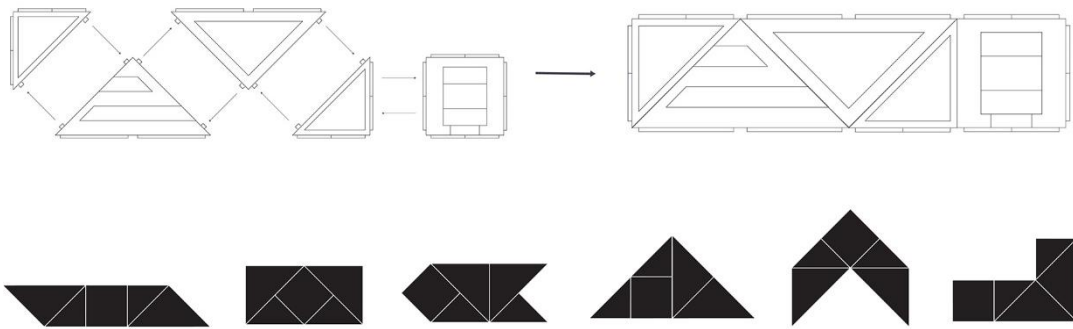


Figure 2. development



Figure 3. Prototype

CONCLUSIONS AND DISCUSSIONS

Application of fresh stucco in creative product design The objective is to study the properties of stucco and experiment with the molding of stucco to apply to product design. Important information can be categorized as follows:

1. In terms of ingredients, it mainly consists of lime. The mixture consists of sand, fiber, leather glue, and jaggery, which is a unique blend of Phetchaburi fresh stucco material

2. Qualifications The appearance of the fresh stucco is off-white. The fresh stucco is tough, smooth, soft, and can be molded. Easy to press or squeeze, the details of which are as follows:

2.1 It is a property derived from leather glue and jaggery, allowing them to be molded and bonded together.

2.2 It is a property derived from sand and fibers that contributes to protecting the material from cracking.

2.3 will be more hard. When allowing the calcareous texture to be exposed to air

From the above information, it can be said that the product on the desk is a product that is constantly in use. The material used should therefore be fairly strong. Fresh stucco material is a material that, when dried, has a relatively high hardening and durability for use. Therefore, it is a material that can be well applied in design.

From designing products on desks from fresh stucco materials to designing by applying fresh stucco materials to change the context of materials that were originally used to create sculptures to decorate various places of worship into products that can reach people today, it is a design process that takes into account material properties, which is considered a design process that is in line with the creative economy concept that combines wisdom with design concepts into products that are in line with modern lifestyles that will be one of the ways to promote development along with conservation perfectly.

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REFERENCES

- Chatchawan Sahassaphat. (2018). Phetchaburi craftsmen. Interview, 20 October.
- Khanin Phriwanrat. (2020). The research and development of tie-dyed handicraft products form Krabi Province for the designing of Ko Klang Community's contemporary souvenirs, leading Krabi Province to Creative city. *Journal: Humanities, Arts and Social Sciences Studies*, (20)1, 119-137, Dec 2018.
- Nattani Niamsap. (2018). From follows material. Retrieved on July 7, 2018 from <http://www.arch.chula.ac.th/ejournal/files/article/>
- Noppadon Sangwalpetch. (2019). Study about Materials and Technic of Fresh Stucco Art, Group of Phetchaburi Craftsmen. *Research and Development Journal Suan Sunandha Rajabhat University*, 7(2), 4. <https://doi.org/10.53848/irdssru.v7i2.214362>
- Phichit Nimngam. (2007). Stucco molding. Bangkok: The Fine Arts Department.