

Design Transformation based on Nature and Identity Formation in the Design of Landscape Elements

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Abstract

There is a lack of initiative from the designers to integrate the environmental resources in the material and design production of local urban landscape elements that reflects human culture and lifestyle. Based on criteria and principles of symbol design and transformation process, this paper describes the symbiotic relationship between local plants (flower) and designs of landscape elements. Using visual analysis, the researcher manipulated shapes and forms of local plant images in producing possible shapes and forms for a design of landscape element (lamp post). The results indicate that the design transformation is a systematic process that allows for variations in design without losing the core characteristics and identity of the basic elements of nature.

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Keywords: Design; transformation; nature; culture

1. Introduction

Environmental setting has a major influence on the human development and behavior. The way people shape their environment defines the identity of the community and culture. The natural element is a component of the environment that has a very close relationship with human life. However, the potential of nature as a basis for environmental design to define local identity still needs further exploration. This need is particularly relevant for designers in the process of developing the design products.

This paper focuses on design transformation process inspired by nature and its growth as a systematic system. It requires the understanding of the definition of the concept of transformation by changes in applications and technology and the production process. One should study nature from the function and form of nature to the structure and process of tissues and organs, to complex interrelations between the numerous species of the ecosystem. The analysis provides the designers with combinations of shapes and colors and textures. The vision in graphic design is to respect for the natural world by incorporating nature into the

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visual design that emphasizes human values and dimensions. In the field of architectural design behavior is seen to imitate nature (Tavsan et. al., 2015).

There is a need to identify the potential of nature as a source of image making that reflects human culture and lifestyle. Artists have depended on the natural world for inspiration for the pattern in the modern world. Floral pattern designs were explored because flowers have traditionally been depicted in artwork and decoration since the beginning of visual communication. Despite the emphasis on geometric rather than the organic line, the artists of the Art Deco style followed in a long-standing tradition and placed great importance on the floral motif in fabric patterning. In the Malaysian context, ornamental plants termed as plants with good benefits in terms of its color, smell, shape, size and interest (Mohd Hussain, et.al.; 2012). The plants are closely related to the traditional lifestyles. Local mosques in Malaysia would use traditional motifs taken from local vegetal such as rice plant and lotus (Kassim, et. al, 2014).

This paper demonstrates the significance of systematic design process and ideas transformation in the development of design images based on tropical plants. This study explores the relationship between landscape elements (lamp post design) and its pattern within a transformation framework. It focuses on the process of designing documented by the researcher and evaluation of the design about its aesthetic, functional and cultural values.

2. Literature Review

2.1. Design transformation process

The biological, physical and visual aspects of environment influence life philosophy, culture, society, tradition and creativity development. Nature possesses distinctive potential resources in the production of the design process and innovation. Therefore, the importance of understanding the production process of design has become crucial. In the production of design symbols, less attention is given to the production process compared to that of the final product. The importance of the transformation process is stressed by Charles & Cynthia (1992) who believe that the processes can be altered in solving specific types of problem in the design. In this case, the design transformation process is seen as a source of productivity of ideas and variations for design solutions. The word transformation has been used in the context of the mind to visual interpretation in the communication process. Alan (2001) explains this by stated that the process of graphic thinking can be seen as a communication with ourselves in which we communicate with sketches. The process involved the sketched image on paper, the eye, the brain, and the hand. All ideas are connected while the thinking process regenerates ideas, focuses on parts and recombines them. Alan (2001) relates the term transformation of nature through his statement:

“In the act of transformation into a design, some of the disorders of nature are replaced by human order.

Some of the most successful nature-based patterns creatively abstract the natural form and retaining a liveliness of the design that we recognize as being the essence of nature.”

The design transformation process can be divided into several layers as follows:

- From the point of thinking and creativity.
- From the visual angle and design: physical (elements) and meaning (principles). The transformation process developed in the form of the size, shape, form, fabric and colour. It was then translated by nature good or bad, soft or hard, balance, etc.
- From the perspective of the nature or character of the environment, such as small or big, fast or slow, smooth or rough, etc.

The above aspects and processes are in line with changes in scientific thinking that prioritized the process of designing (Alan, 2002). The system allows for potential solutions to be examined according to the needs and creative decisions.

2.2. Form, structure and image

Nature inspired design process goes beyond the visual exploration. It explores the functional dimension whereby designs organize the synchronous movement of many parts into a fluidly of transformation. A person integrates insights from nature into man-made products, environments, and structures (Ian, 1969). Previous findings indicated that the symbol's creation should be evaluated in terms of the development of element in the form and structure of the plant images. This method encourages a designer to appreciate the value of the creation process in detail. A conceptual sketch is generated from the concept of thinking relationship to the environment associated with interest in the design process (Alan, 2002). In this regard, the conceptual drawings have a close relationship with the shape and structure elements that have been designed (Wucius, 1995).

All the visual elements constitute a form that in this sense, is not just shaped that is seen, but the shape of the definite size, color, and texture. A form is constructed along with other forms creates a structure that involves the relational elements. This process of transformation denotes a process to change in form, appearance or structure. At certain extent, Marcia and Sheila (2005:1) relate the meaning of transformation in terms of real change. The conceptual sketches help in changing forms, image, and structure.

3. Methods

3.1. Manual system of design process of landscape elements

Designers need a clear understanding of the source of the idea, design process, development and design system in developing an effective design process. The researcher adopted the framework of design transformation process by first identifying the criteria for the design transformation and then manipulating forms and shapes using the local plants as the source of ideas. Native plants originally live and grow naturally in the local environment. It also provides a complement to the local landscape that directly gives the area a landscape character (Idilfitri et.al, 2014). In this analysis, the design transformation process was analyzed and documented to identify the potential of the natural element (flower) in producing design variations in shapes and forms using lamp post design as the sample design. Form, structure or materials in the nature are also used for furniture design both for aesthetic and practical purposes (Tavsan & Sonmez, 2015).

Elements and principles of design were considered in the development of a manual system to identify the criteria for the transformation process of forms and shapes. The methodological framework is designed by selecting the most relevant design elements. The design phase involves the process of recognizing, refining and strengthening the design criteria by producing more accurate and detailed transformation processes.

The criteria identified for the process are the element of the form, the design principles, the element of nature and the form of flow sequence. Figure 1 shows the flow sequence of plants transformation based on the criteria developed for the process. In this context, the structure, creativity, beauty, process, symbolic image and the design intention are regarded as the manifestation of the culture and identity.

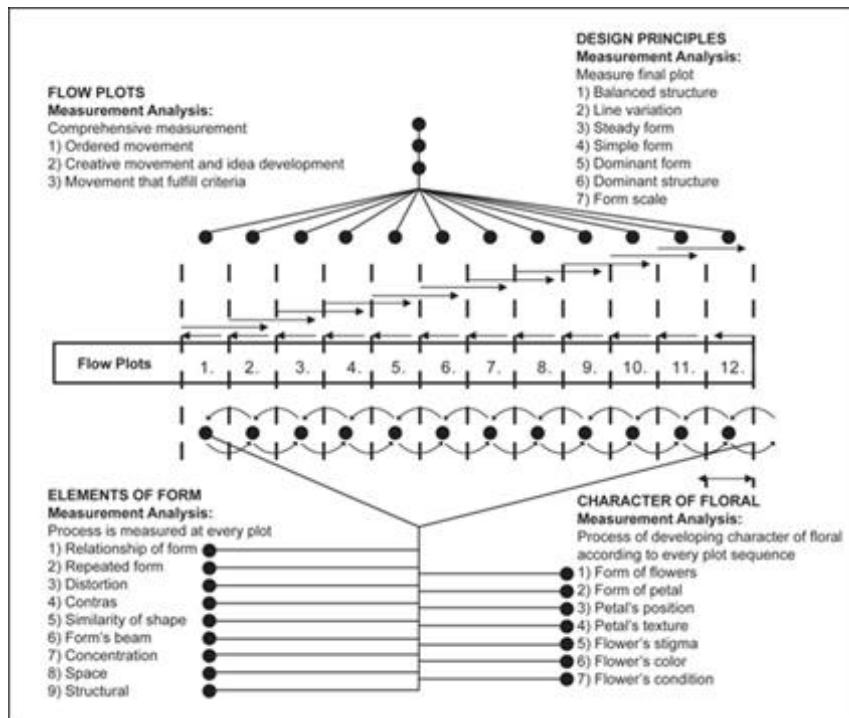


Fig. 1. Plant (flower) transformation process flow sequence based on the design criteria

Based on the concepts and criteria reviewed in the study, the production process criterion is developed as a framework for the lamp post design experiment described as follows:

- Criteria for analyzing images for the lamp post design based on plant characteristics and elements of forms.
- Criteria for creating the transformation process by the system from the first plot to the end of the plots based on the principles of form features.
- Criteria for analyzing the process of transformation in the images sequence that was generated based on the transformation process flow sequence.

3.2. *Criteria of the transformation process*

This study examines the transformation process through the application of elements in the character of the plants. Wucius (1997) suggested that one should examine the shapes of the components of natural forms and how they work together structurally. In this regards, Hoberman (2006:1) emphasized that the incremental growth of a budding plant, the natural world is constantly changing form. In this context, the transformation of size and shape reveals subtle and ordered natural processes. The following principles and criteria used as the framework for analysis of the elements (plant images) from abstraction to new design ideas:

3.2.1. *The elements of forms*

There are identifiable criteria that feature the elements and principles of design during the analytical and development process of symbols creation. The researcher has analyzed the process using the element of forms through respondents' evaluation. Based on the criteria developed by Wucius (1997) in the development of design creation, regarding the transformation process of symbol design are as below:

- Structure in the process of design (e.g. formal and informal structure; merged/separated)
- Relations in a process design (include forms that separate distance; meet and overlap)
- Repeating the process in the form of design (include repeating appearance, size and color, direction, position and space)
- Changes that gradually form (gradation) in the process of design (include changes in appearance and gradual reduction; change direction and circle)
- Contrast in the form of process design (include contrast in shape and size, direction and position)
- Radiation in the form of process design (include property emission in a position outside of the center/ to the center)
- Space in the process of design (include separate positive and negative; separate into the illusion)

3.2.2. *The design principles*

The design principles in the transformation process are as below: Balanced structure; Flow of line; Form a robust; Simple design; Dominant form and Dominant structural

3.2.3. *The transformation flow of the sequence*

The criteria used at the end of the process flow in the creation and transformation sequence analysis includes:

- The orderly movement – including movement format of plots
- The movement of creative and development ideas
- The movement that meet the criteria
- The movement format that is causing the plots is not logical or defects

Based on the elements and principles of design identified above; this study has developed a framework for the design transformation process and production of design inspired by plants (flower) (see Fig. 2).

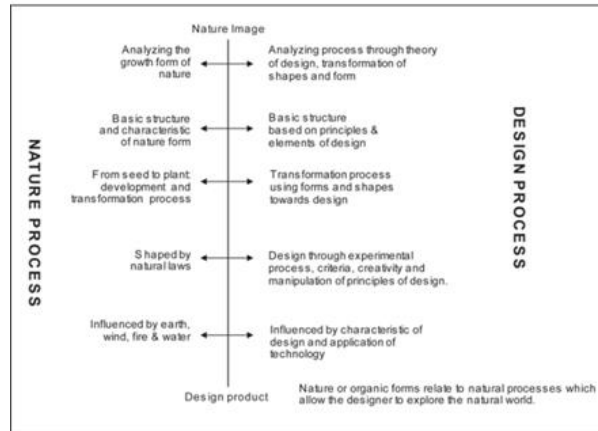


Fig. 2. Conceptual design frameworks relating to natural processes

4. Results and Discussion

Design transformation process was analyzed to identify the potential of nature (flower) in producing design variations in shapes and forms of lamp post design based on plants images. The analysis of the design process indicates that in designing the elements, the design transformation is defined effectively through a systematic process. The design variations produced in the layers of the sketching process provide a potential for new creative shapes and forms that can be translated into the making of landscape elements with local image and characteristics. Fig. 3 indicates the process of design transformation inspired by a local flower by using the identifiable design and process criteria. The symbolic forms are transformed into product /landscape elements, in this case, lamp post design (see Fig. 3, Fig. 4 and Fig. 5).

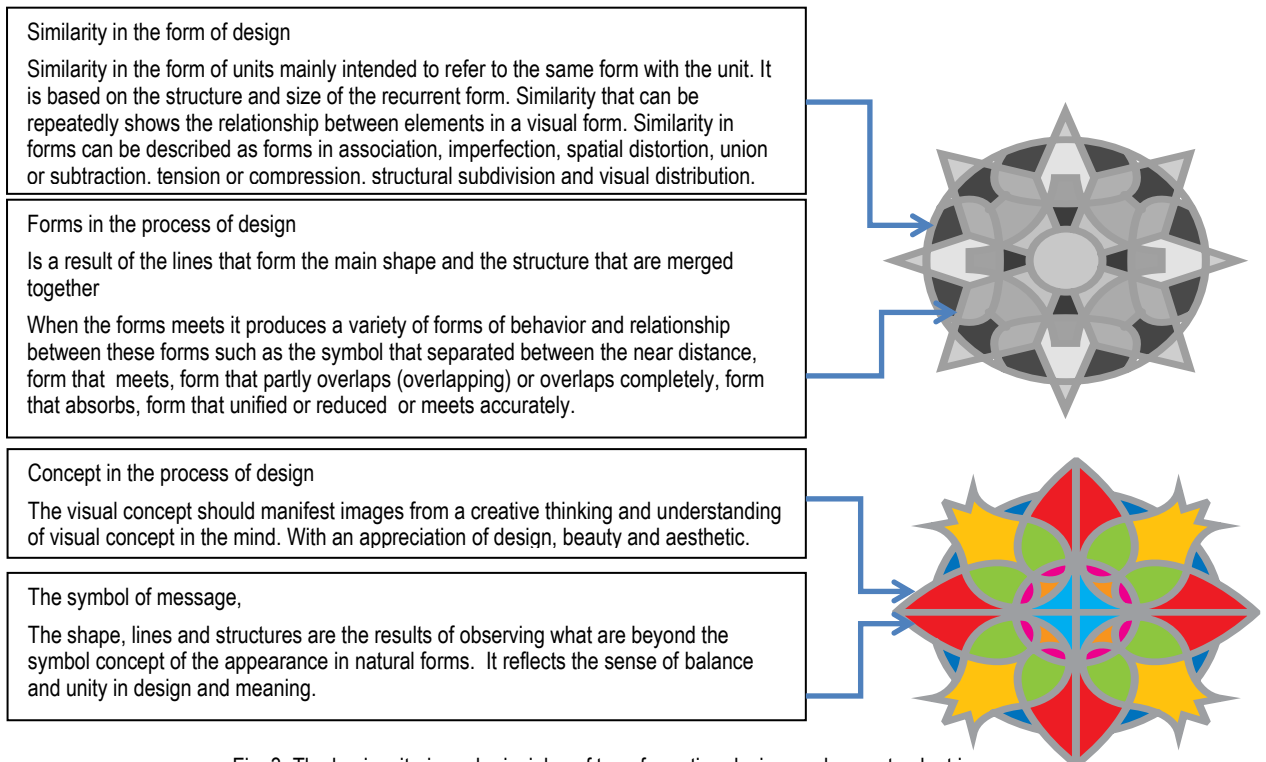


Fig. 3. The basic criteria and principles of transformation design analogous to plant images

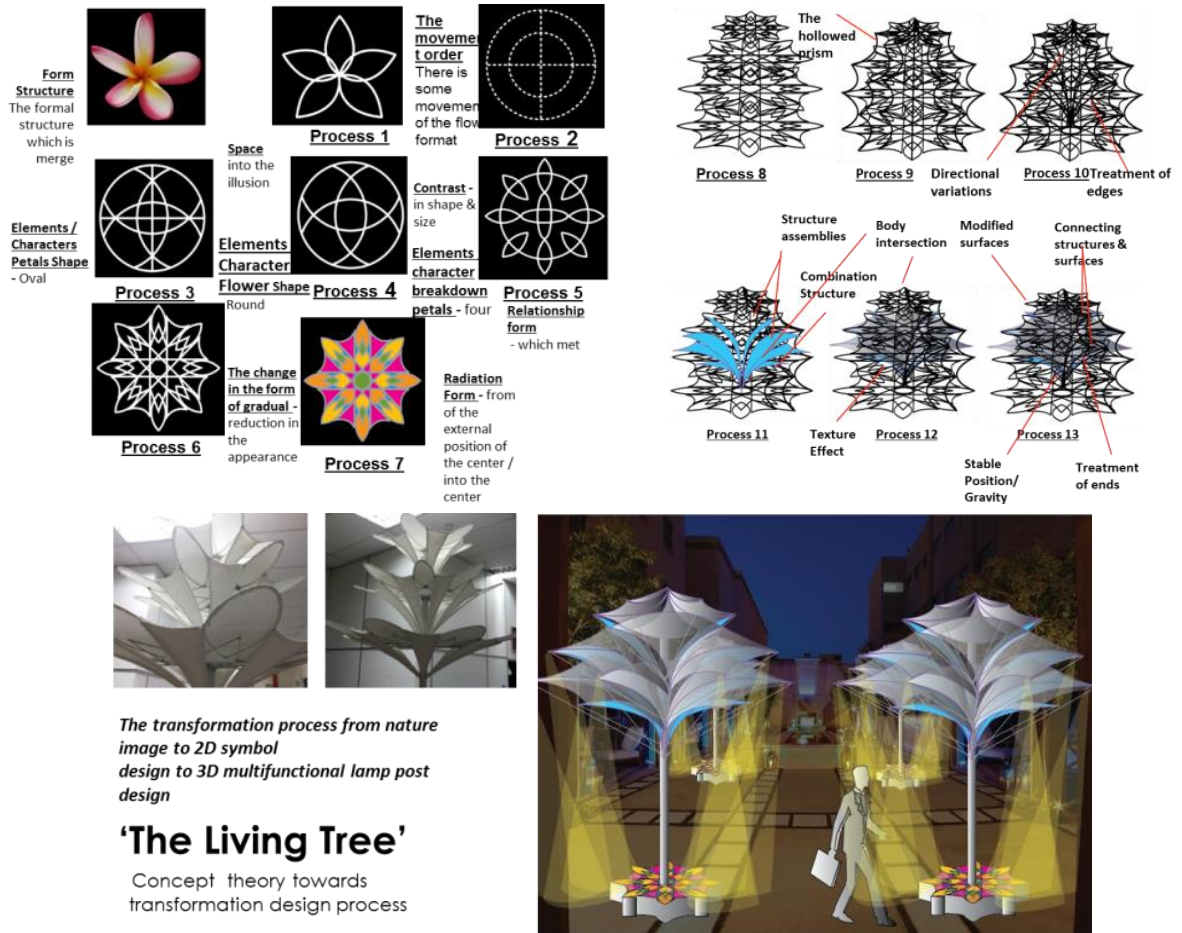


Fig. 4. The transformation process from nature image to 2D symbol design to 3D Lamp shade

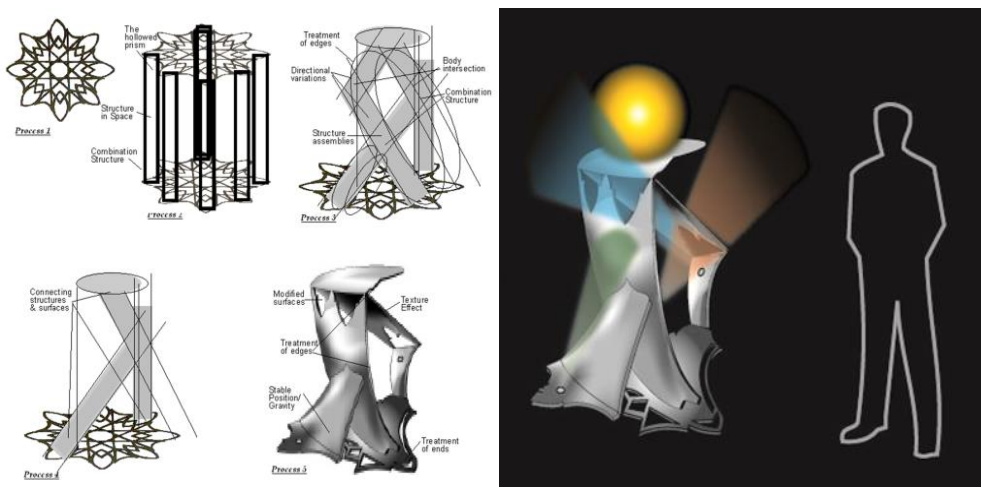


Fig. 5. The transformation process from nature image to 2D symbol design to 3D Lamp shade design

It was found that natural resources such as plants have the potential to be the innovative resources that could be used as guidance to understand the transformation process of design, principles of aesthetic design and evaluation of design. The transformation process is not only based on the visual aspect but also from the functional aspects. Findings in this study are:

- The more effective design could be generated when the process explored through the application of the media, equipment, etc. using the proper method.
- To emphasize on the visual approach using conceptual sketches produced during problem-solving and idea generation processes in design with innovative artistic expression and meaning.
- The approach includes the intellectual process of forming aims and boundaries, analysing the scenario, considering the existing possibilities, selecting the elements for analysis and developing a way to approach the appropriate design problems of design.

5. Creative Process and Development of Local Identity

The potential of the lamp post design inspired by plant images to be developed for commercial products in the market. The qualities are generated for the design process and the potential of plants (flower) in diversifying the design solutions that suit the context.

- Statements and issues: The image of tropical plants represents identity, way of life of transformations that inspired and lasted through generations.
- Concept of innovations: To preserve the local elements from local plant images symbols into modern living environment
- The approach: Simplifying a new functional design without losing the beauty and values from the past.
- Potential consumer: The Local Authority, Local & International Designers, Architects and Planners, Manufacturers, Design Consultants Developers, etc.
- Benefits/advantages; Developing a new approach to producing new tiles images with the integration of the new concept and material. This measurement generates the findings and the similarity of characteristics and functions in product innovation and commercialization
- Competitors/current practice Designers/ Artist/ Manufacturers using method of tiles design production from actual cultural/ local images added directly to product design.

The researcher believed that the conceptual drawings from the point of form and structure were the important elements in creating symbols that are attractive and functional in forms. It can be concluded from the discussion that the transformation process through the manipulation of the shape and structure of plant image can be developed using the conceptual drawings. The drawings describe where the elements or representations of visual composition take place.

6. Conclusion

A systematic thinking and a clear aim and objective are important in developing an effective transformation process. Beauty, harmony, and aesthetic values must be considered in the visual assessment. The exploration of the transformation process and methods based on the nature concept, in this case, the plants, can contribute to increasing the knowledge and the production involving product design that based on the nature as the resources. Also, the theoretical information that has been collected and practice in this study can be utilized to create innovations and their promotion for nature-based product. The use of local plants could generate the original identity of symbols and images to industrial as well as landscape architectural products. With the application of the systematic methods, techniques and processes through experimentation, innovation, and knowledge could be used to benefit the related parties.

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