



# New Trends and Issues Proceedings on Humanities and Social Sciences



Volume 4, Issue 11, (2017) 313-320

ISSN : 2547-881

[www.prosoc.eu](http://www.prosoc.eu)

Selected Paper of 6th World Conference on Design and Arts (WCDA 2017), 29 June – 01 July 2017, University of Zagreb, Zagreb – Croatia

## Urban Waste as an Alternative Material for Making Aesthetic Elements for Interior Design that Represent Indonesian Ornamental Pattern

**Firman Hawari**<sup>a\*</sup>, Bandung Institute of Technology, Jawa Barat 40132, Indonesia.

**Agus Sachari**<sup>b</sup>, Bandung Institute of Technology, Jawa Barat 40132, Indonesia.

**Adhi Nugraha**<sup>c</sup>, Bandung Institute of Technology, Jawa Barat 40132, Indonesia.

### Suggested Citation:

Hawari, F., Sachari, A. & Nugraha A. (2017). Urban waste as an alternative material for making aesthetic elements for interior design that represent Indonesian ornamental pattern. *New Trends and Issues Proceedings on Humanities and Social Sciences*. [Online]. 4(11), 313-320. Available from: [www.prosoc.eu](http://www.prosoc.eu)

Selection and peer review under responsibility of Prof. Dr. Ayse Cakir Ilhan, Ankara University, Turkey.

©2017 SciencePark Research, Organization & Counseling. All rights reserved.

---

### Abstract

In the field of design, activities to develop form, application materials, production processes and product functions lead to eco-design, which is an opportunity to use urban waste for supporting daily human activities and aesthetic values, reducing dependence on nature and also conserving resources. The various wastes experimented with were office paper, plastic packaging, paper packaging, dry leaves, plastic bags and a mix of them. Numerous experimental steps were taken to produce aesthetic elements by utilising these wastes as prime material. A systematic procedure was applied and using aesthetic elements, an aesthetic board was made. It was seen that there is a possibility to create Indonesian ornamental patterns with these wastes. The results show that urban wastes have great potential as material for aesthetic elements of interior design. This study was conducted on the basis of the culture, natural resources and social behaviour of Indonesia as an agrarian country.

Keywords: Urban waste, alternative material, aesthetic element, interior design, Indonesian ornament.

---

\* ADDRESS FOR CORRESPONDENCE: **Firman Hawari**, Bandung Institute of Technology, Jawa Barat 40132, Indonesia.  
E-mail address: [firmanhawari@gmail.com](mailto:firmanhawari@gmail.com) / Tel.: +62 22 2500935

## 1.Introduction

So long as global warming issues continue to emerge, efforts to reduce and control its environmental impacts will also increase. In the field of design, one of the implementations of utilising urban waste is that it is done in a directed, systematic way and has no impact on the environment. Several research and experimental activities were conducted on urban waste utilisation as an alternative material product. Considering the flexibility, scope of utilisation, ease of application and the tendency of people who are accustomed to its use, it can be assumed that urban waste materials can meet the criteria for a board panel. The resulting alternative product is directed to be utilised to support interior design.

One of the research series conducted produced a product called an aesthetic board. An aesthetic board is an interior design element that is shaped and characterised like a board, with the basic ingredients taken from urban waste. Technically, for aesthetic board production, urban waste is treated and assembled to form like a board. From this activity, a configuration of vertical crosses was created. This configuration was created to optimise urban waste sheet character to be assembled into an aesthetic board panel as an interior design element. Structurally, the aesthetic board consists of an inner/core structure called 'vertical cross' and an outer layer that is textured. The vertical cross structure is an arrangement of sheets embedded in such a way that it forms an inner web structure that makes a dry leaf board strong that is rigid, porous and hard. Each component of its constituent elements is united by glue of chloroprene contact adhesive type. This glue is chosen because it can produce very strong adhesion and is flexible. The results obtained were the overall shape of an aesthetic board that was almost equivalent to plywood and multiboard. Aesthetic boards are available at a thickness of 18 mm.

The visual appearance of an aesthetic board is largely determined by the texture appearance of the outer surface layer, which consists of a series of waste sheets arranged horizontally to form textured and patterned layers. The textured appearance is considered unique and original. These textures and motifs can be modified in accordance with the functional and aesthetic needs.

With technical and aesthetic capabilities, the aesthetic board is geared to serve as an interior design element for products such as partitions, wall layers, furniture and more. With proper handling of design and applications that are direct and consistent, the aesthetic board is expected to be able to function in accordance with the purpose of its creation.

In the context of culture, Indonesia is a country known to have strong-rooted traditions. It is implemented in the form of cultural products such as art, equipment, ceremony, shelter, way of view, and so on, which is a characteristic feature of Indonesia. One of them is batik. The original values of Indonesian batik have been preserved till date and are recognised by the world. This advantage must be maintained and should be developed.

## 2.Research questions

Some questions that need to be asked from research activities include:

- How to explore the potencies of urban waste to represent aesthetic elements and the Indonesian cultural identity, especially the batik motif.
- How is the feasibility of batik motif produced on aesthetic element made from urban waste?
- Is there a possibility to raise a new theory on implementing urban waste as a base material for representing Indonesian cultural identity?

### 3.Literature review

Urban waste in the form of sheets was collected and utilised as a board by applying the configuration of a vertical cross. The resulting panel product was called an aesthetic board. In aesthetic board production, the configuration of vertical cross was applied in an original, accurate and optimal manner. This composition formed an aesthetic board that was strong, rigid and hard. The outer surface was coated with a waste sheet that produced unique and original texture visualisations.



Figure 1. Urban waste

Based on basic materials of urban waste, the aesthetic board is divided into several types, namely paper board, plastic board, dry leaf board and a mix board. Paper board is an aesthetic board made of waste paper, usually from offices, schools and shops. Plastic board is made of plastic waste that is found in markets, households and schools. Dry leaf board is made of dry leaf waste that there are in many corners of the city and on the roadside. While the mix board is made of a variety of urban waste materials that are composed into an aesthetic board. So far, aesthetic board experiments just produce paper board and dry leaf board. This study will discuss more about the implementation of batik motifs on dry leaf board and paper board.

In 'Studi Faktor Kenyamanan Pada Kursi Santai Dengan Struktur Dari Material Dry Leaf Board'. Penelitian PNPB – ITS (2014), Firman Hawari mentioned that the dry leaf board consisted of four layers of structure, namely two pieces of the outer layer and two pieces of the inner layer. Each layer was arranged in such a way that it formed a strong solid plane. Each component of its constituent elements was united by glue of chloroprene contact adhesive type. This glue was chosen because it can produce very strong adhesion and is flexible. The results obtained were that the overall form of dry leaf board was almost equivalent to plywood and multiboard.

In 'Batik As A Local Identity In Interior Design' (Anggraita, 2013), Aria Weny mentioned that batik was a pictorial fabric, and the process of making it was to specifically apply a certain motif to an empty fabric made of silk cotton, polyester, rayon or other synthetic materials. In general, the batik motif is formed by wax, using a tool called canting for fine motif, or a brush for a large motif, so that the wax liquid seeps into the fabric fibres. Fabrics painted with wax are then dyed in the desired colour, usually starting from the young colours. Immersion is then performed for other motifs with darker colours.

Based on the manufacturing process, batik is divided into several types: write, print, combination and print. Motif-based batik is divided into several types, as shown in Figure 2.



Figure 2. Various motifs of batik

1. **Batik kawung** is symbolised by lotus flowers; motifs with pictures of various flowers symbolise holiness and long life.
2. **Batik parang** is the parang-shaped eye, symbolising power and strength. It was used only by rulers and knights.
3. **Batik sekar Jagad** has a colour that symbolises the diversity that exists in Indonesia.
4. **Batik Sido asih** means hope that is accomplished. This motif is made so that humans have a sense of mutual love and appreciation.
5. **Batik Sida Mukti** is the picture of an eagle that has hope that all desires will be immediately achieved.
6. **Batik Sido Mulyo** means prosperity.
7. **Batik Truntum** is worn by the bride's parents in a wedding ceremony; it means to lead.
8. **Batik Nitik motif** is expected to be worn by a wise person.
9. **Batik Grompol** means to gather, so it is hoped that all good things such as fortune, happiness, harmony of life and tranquillity are gathered into one.
10. **Batik Abimanyu**, Abimanyu is the son of Arjuna; the wearer is expected to have the character of a knight like Abimanyu.
11. **Batik Udan Liris**, means a rain drizzle, which means fertility.
12. **Batik Saudagaran** is the theme of natural objects or animals that are brave.

#### 4. Methodology

This study has used a qualitative approach with an emphasis on the meaning and capability of urban waste as a raw material for forming batik motifs on the surface of an aesthetic board (in this case: dry leaf board and paper board), production activities and applying in interior design. In this research, several stages are performed, such as more accentuate data processing, experimentation, analysis and hypothesis.

## 5. Experiment

### 5.1. Dry leaf board

Implementing a configuration of vertical cross resulted in the dry leaf board to be a strong and rigid board panel, according to the expected function of dry leaf waste. Its aesthetic value was obtained from the surface texture, produced by texture appearance in the outer surface layer, consisting of dry leaf waste arrangement arranged horizontally to form a textured layer.

The application is to form a leaf batik motif on a dry leaf board. Since the main ingredient of dry leaf board is leaf, the formation of batik motif on surface is reasonable. Some leaves of various types and colours, as mentioned above, are strung together to form a leaf-patterned batik on the outer surface. The leaf motif is seen from the arrangement of leaves that form a pattern and do not look random. The end result can be seen in the picture in Figure 3.



Figure 3. Batik with leaf motif on dry leaf board surface

The next step is to apply the dry leaf board as a wall panel material for interior space. The appearance is as shown in Figure 4.



Figure 4. Applying dry leaf board on interior of public area

The next step is to apply the dry leaf board as a wall panel material for interior space. The appearance is as shown in Figure 4.

### 5.2. Paper board

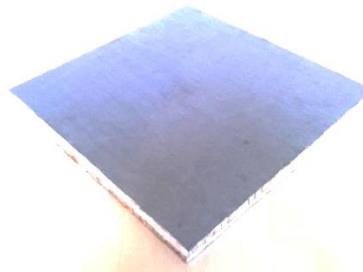
A paper board is an aesthetic board that is formed by implementing a configuration of vertical cross configurations by utilising paper waste. The waste paper used comes from many office areas, shops, schools and other areas.





**Figure 5. Paper waste**

The manufacturing process is exactly similar to that of the dry leaf board. The texture on the outer surface is formed as a result of its core shape. In this study, paper board experiments were done using packing paper. The result is as given in Figure 6.



**Figure 6. Paper board**

By implementing the configuration of vertical cross with waste paper as raw material, the paper board has a strong, hard and rigid panel material. The uses are diverse, including wall panels, floor panels, base and furniture.

In this study, the paper board is made to display the surface with a parang motif. It is a batik parang, which is the easiest batik motif to apply. This experiment shows that waste paper, in this case packing paper, can also be implemented to form batik motifs. The final form is as in Figure 7.



**Figure 7. Batik parang patterned on paper board surface**

The next step is to apply a paper board patterned parang on the interior design in residential areas. With an eye-catching surface appearance, parang-patterned, the paper board can be a panel on walls, ceilings and even on floors in public areas. In this study, the paper board is used as a wall ornament. The appearance is as in Figure 8.



**Figure 8. Applying paper board in interior of residence**

## **6.Data analysis**

So far, the material factor has a strategic role as one of the characters in interior design, in addition to furniture and other elements. Due to its light nature, the aesthetic board is also moveable and flexible, and is tested to see the adaptability with the function and character of the dynamic interior design.

In Figure 7, dry leaf board was used as a divider of space or as a partition between the administration room and the service area (elevator). This application used as a wood/iron frame and dry leaf board is installed according to the frame size and is locked with screws/dowels. The usage of leaf colour was optimised so that the visual appearance looked contrasting. The overall appearance of the dry leaf board as a partition material is representative of the Indonesian cultural identity, batik.

In Figure 11 is shown use of the paper board as a wall ornamentation of a dwelling room. Here, the paper board is mounted on a wall using a screw/dowel/fisher. The paper board functions as a residential character that is ornamental and adds to the aesthetic atmosphere.

In terms of the structural capabilities based on the experiments above, it can be assumed that the dry leaf and paper boards can be utilised as furniture and interior structure material. They can also be used as wall panel, floor and ceiling. Aesthetically, the visual appearance of the dry leaf board and paper board can play a role in shaping the dynamic and natural values of interior design, in addition to creating new innovations to represent the growing identity of Indonesian culture.

The batik motif application on a non-textile media is different from that of textile media. In the textile media, batik application is done by using canting, brush and print on a sheet of cloth. The application of batik on non-textile media can use a variety of equipment with any kind of raw materials. An application of batik to non-textile media is full of innovation, related to equipment, raw materials, media and also on final function. The making of batik motif on non-textile media can be applied to wood media, metal, ceramic or plastic. The equipment used also varies like brushes, welding tools, CNC, lasers and so on. The material can be oil paint, watercolour, spray paint or sandblast. Various functions that can also be achieved are as follows: on the ceiling, wall, floor, partition, wall decoration and others. It can be said that application of batik on non-textile media requires the creativity and ability to find opportunities to utilise the results obtained.

Likewise is the application of the batik leaf motif on the surface of dry leaf board and paper board. This entails use of leaves of various types, sizes and colours, as a formation of leaf motif on dry leaf board using adhesive for attaching. For experimenting this time, the theme taken is the motif of parang and leaf motifs. This is done because of character adjustment of waste material and ease of form achievement. The final result shows that on dry leaf board and paper board, batik motif can be achieved well.

Hawari, F., Sachari, A. & Nugraha A. (2017). Urban waste as an alternative material for making aesthetic elements for interior design that represent Indonesian ornamental pattern. *New Trends and Issues Proceedings on Humanities and Social Sciences*. [Online]. 4(11), 313-320. Available from: [www.prosoc.eu](http://www.prosoc.eu)

With distinctive character, dry leaf board and paper board with batik-pattern is very likely to form an innovative and original interior visual theme, as well as different from previously formed themes. Visualisation of batik motifs on surface will represent ornamentasi, a typical Indonesian culture identity in every utilisation. In addition, green design applications with implementation of urban waste utilisation will definitely provide added value to design and application.

## 7. Conclusions

The study of dry leaf board with leaf batik motif as interior design material draws some conclusions, among others:

- Leaf and paper waste can form typical Indonesian batik motif on surface of dry leaf board and paper board
- Original and created based on real conditions in Indonesia
- For a while, dry leaf board is still customised
- The production process using new and never before application method
- Dry leaf board and paper board potential as interior design materials for global utilisation
- Important things to be done is laboratory test to determine the ability of mechanical, physical, chemical and technology on aesthetic board. By knowing these, utilisation of aesthetic board will develop greatly. In addition, modification of configuration will be easier for more extensive applications.

## References

- Aisah, W. Y., Prastyawan, A., Sos, S. & Si, M. (2013). Analisis Pengelolaan Sampah Oleh Dinas Kebersihan dan Pertamanan (DKP) Kota Surabaya. *Indonesia. E-Journal UNESA*, 1(3).
- Anggraita, A. W. (2013). *Batik as a local identity in interior design*. Proceeding - International Conference on Creative Industry, Jurusan Desain Interior, FTSP-ITS, Surabaya, Indonesia.
- Nugraha, A. (2005). *Transforming tradition for sustainability. Joining forces*. Helsinki, Finland: University of Art and Design Helsinki.
- Surdia, T. (1984). *Pengetahuan Bahan Teknik*. Jakarta, Indonesia: Pradnya Paramita.
- Wong, W. (1977). *Principles of three dimensional pattern*. New York, NY: Van Nostrand Reinhold.
- [www.kesolo.com/motif-batik-parang-ini-makna-dan-jenisnya](http://www.kesolo.com/motif-batik-parang-ini-makna-dan-jenisnya)
- [www.kabar10.com/ragam/berbagaimacam-jenis-batik](http://www.kabar10.com/ragam/berbagaimacam-jenis-batik)