

Design of the Element Interior with Betawi Culture Ornaments Made of Portable Diffusor for Interior Acoustics and Aesthetics

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Abstract : The results of Betawi culture need to be preserved, developed and interpreted as a legacy of Indonesian cultural wealth that has high aesthetic value. Interior elements are part of building space, also need to be processed aesthetically. The purpose of this study was to develop ornaments of Betawi culture that are applied to interior elements by using portable diffusion as an acoustic function and enhance cultural aesthetics in the interior. Previous research was only about designing portable acoustic diffuses and space decorations. The method used in this study is the method of distributing the functions of quality and a positive design. The positive design process has explored the application of creative concepts, by considering love and charity, for the design process. Benefits in the form of interior design results, for now, long-term and short-term happiness aspirations, and can direct someone to behave well. The design of interior elements with Betawi cultural ornaments made of portable diffuses for acoustic and aesthetic interiors. Interior design needs to consider the function, happiness of the user, and preserve the wealth of cultural results.

Keywords: design, interior elements, Betawi ornaments, acoustics, aesthetics

I. INTRODUCTION

Betawi ornaments are one of the results of Culture from Jakarta. The application of Betawi ornaments is found in many forms of original Betawi house architecture and public areas, both interior and exterior of the building. The form of Betawi

ornaments is very easy to apply by using various building materials, such as wood, ceramics, plastic, acrylic, stainless steel, rubber, etc.

The results of previous studies have produced portable acoustic diffusers, as a medium to diffuse and absorb sound diffusely, [1]. Portable acoustic diffusor combined through an aesthetic touch in the form of pictures, sketches, or paintings, is a follow-up study by implementing wall art. Experimental research on acoustic diffusion that has been done is to make knock down partitions in space that require acoustic functions [2]

The research was carried out by a design process with methods focused on positive functions and designs. Portable acoustic diffusor is developed on interior elements because it is needed in the function hall and national library. The optimal acoustic function is needed for interior function halls and libraries. Betawi ornaments were developed for interior elements with portable acoustic diffusor functions for the convenience of space users, both for each individual and everyone in the room. The design of Betawi ornaments at national function halls and libraries can introduce and preserve Betawi culture to the wider community. The meaning contained in the Betawi ornamental variety has a meaning that is closely related to the culture and order of customs of the Betawi community or Jakarta. The application of Betawi ornaments needs to pay attention to the meaning and philosophy of the decoration.


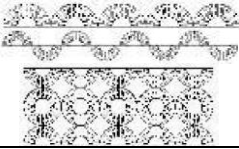

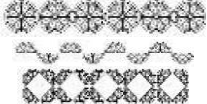

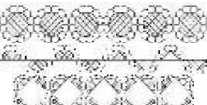




II. LITERATURE REVIEW

Betawi originated from the word Batavia, this name appeared since Dutch colonialism. Betawi is another

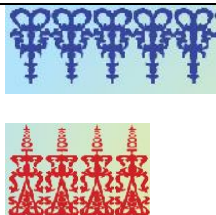





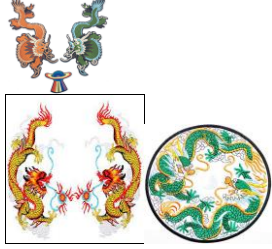

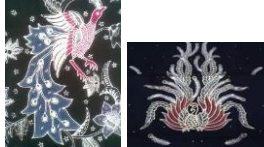
name for Jakarta in its development. East Indies Trade Relations (VOC), in 1621 inaugurated the name Batavia for the fortress founded by Governor-General Jan Pietezoom Coen near the mouth of the Ciliwung river. The Betawi tribe is a mixture of various ethnic groups that have already lived in Jakarta, such as Sundanese, Javanese, Arabic, Bali, Sumbawa, Ambon, Malay, and Chinese. The Sundanese dominate the Betawi tribe, in addition to the mixture of various tribes, Betawi is also inhabited by foreign traders and sailors from the north coast of Java, [3][4]

In the book Study of the Development of Betawi Ornaments [5] it is mentioned that some of the ornaments found in the Betawi house are geometric, flora and fauna forms. These ornaments are Roses, Jasmine flowers, Cempaka flowers, Cananga flowers, Tasty flowers, Kimhong flowers, Garden flowers, Sunflowers, Pomegranate flowers, Tamarind flowers, Amethyst flowers, Cashew flowers, Tumpal forms, Sun symbols, banners / Swastikas, tigers, crocodiles, crows / squeaks, peacocks / honges, horses, gangs, Gigi Balang, bamboo shoots, deer head horns, big dragons, and calligraphy. Betawi cultural ornaments and transformation in the form [6]. can be seen at (table 1),

Table 1: This image is an ornament of Betawi culture

Ornamen Betawi	Betawi ornament form	Ornament Transformation
Matahari		
Cempaka flower		
Matahari Flower		
Melati flower		
Gigi Balang		

Ginggang		
Tapak jalak		
Sedap Malam		
Kenanga flower		
Kimhong flower		
Kaca piring flower		
Delima		
Tapak Dara flower		
Kecubung flower		
Jambu Mete		
Pucuk Rebung		

		
Tumpal form		
Banji/ Swastika		
Naga motives		
Burung Merak Motives		

Laseau [7] categorizes the transformation of forms into four based on their characteristics, namely: (1) Topological transformation (geometry); Fixed, unchanging geometry, if the shape is changed, no surface is damaged or changed, (2). Ornamental grammar transformation; The form is shifted or translated, the form rotated (rotated), reflection (reflects), and inversion (overturning, reversing), (3). Transformation reversal (inverse); The shape behind the image. The figure of the object to be transformed where the image of the object is changed to the opposite image, (4). Transformation

of distortion (confusing); Designer freedom in activities. The form is changed according to the development of the designer.

Portable diffuse material is a porous damper; as in mineral wool, absorbent plaster. Parts of portable diffuse material can decipher sound into material components. Portable diffuse material can describe sound propagation in porous absorbers because of material characteristics. Portable diffuse material has a standard absorption coefficient and surface impedance, which is needed in the design, [2]

Indoor elements contribute to the quality, user satisfaction, and security in space. Research on the influence of interior elements on the acoustic function found that interior materials that do not absorb sound properly result in high noise. Noise is felt to interfere with user activity and affect the comfort [8]. Acoustic modification in space public space is needed especially in interior finishing, the selection of materials, layout, furniture, and equipment, must be considered to reduce noise levels. The composition of the material shows how the material can affect the overall quality of the room and, therefore, its inhabitants. Materials used in interior architecture through the touch of architects and designers, are ensured to have quality functions, contain literal meanings, or express methods, and may be symbolic and cultural meanings, [9]

The aesthetic role in the public interior space will be increasingly decisive in exploring elements of space and introduction to the wider public about the cultural ornaments that are to be conveyed. Mano and Oliver [10] report that 'hedonist' or 'aesthetics', is an assessment of design results because of its intrinsic nature. Givechi and Velasquez, [11] show that aesthetics in product design are capable of generating positive reactions such as excitement, inspiration, achievement and useful to that end. Portable diffuse material is a porous damper; as in mineral wool, absorbent plaster. Parts of portable diffuse material can decipher sound into material components. Portable diffuse material can describe sound propagation in porous absorbers because of material characteristics. Portable diffuse material has a standard absorption coefficient and surface impedance, which is needed in the design. Difusor portabel dapat menyerap pantulan suara pada frekuensi (Hertz) dengan koefisien penyerapan (Alpha) yang sesuai dengan suara gaung pada ruangan.

III. METHODOLOGY

The design process includes; analysis, development, paper thinking, implementation, and evaluation (analysis, development, thinking on paper, implementation, and evaluation). This multi-method research method is to compare the quality of indoor portable diffuser (IEQ) at the function hall and library reading room and its effects on safety, satisfaction, and quality of care. [12] Portable diffusion with mythology Betawi culture ornaments is described in the positive design. The Positive Design Framework (a) Design For Pleasure, (b) Design For Personal Significance, (c) Design For Virtue. [13]. Portable diffuse design that is useful for personal satisfaction at this time, for the satisfaction of the general public in the long term and a design that invites others to be virtuous by introducing or preserving Betawi culture.

IV. RESULTS AND DISCUSSION

4.1 The results of the Betawi Ornament Design Applied in the Space Interior Elements Made of Portable Diffusion in the National Library

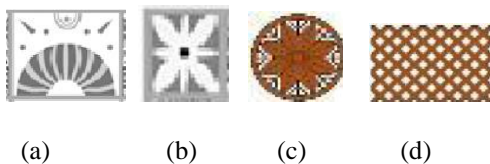
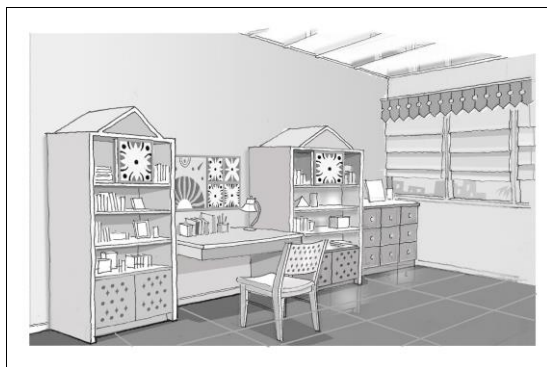


Figure 1: Betawi ornaments with (a) Matahari motifs, (b) Melati flowers, (c) Cempaka flowers, (d) Tapak Jalak on interior element designs in the National library

Portable Matahari flower ornaments made from walls designed for walls are located in front of the

National Library room reading desk. Betawi sunflower ornaments on the National library symbolize life and inspiration for the wider community because the sun is symbolized as a source of life and as a light. The light of the sun means that the National library must always have a bright mind and mind. Matahari flower ornaments also mean as lights that will illuminate the hearts of the National Library visitors.

Cempaka flower ornaments made from portable diffuser designed for walls are located in front of the National Library room reading desk. Cempaka flower ornaments have a high position, this is because Cempaka trees grow in high areas. The name Cempaka comes from the Sangsekerta language which means gemstone. Cempaka flowers are also called Kantil flowers, while Kantil means always remembered or followed.

Betawi ornaments in the form of Tapak Jalak, meaning that the footprint (the Javanese language means trace) of the starling foot. Starlings are famous for their courage so that the Tapak Jalak ornaments mean courage for truth.

Portable diffuse patterned Betawi ornaments with the motifs of Matahari, Melati Flowers, Cempaka Flowers, Jalak Tread on interior element design have high aesthetic value and excellent acoustic absorption so that the application to the National Library is suitable. The application of the Betawi culture to the National Library also serves to introduce and preserve the results of Betawi culture to the wider community.

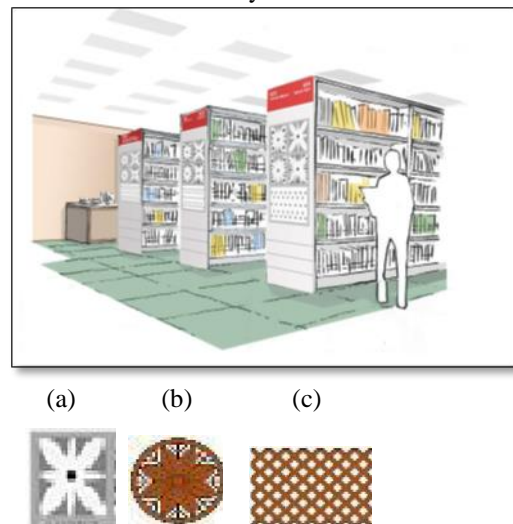


Figure 2: Betawi ornaments with (a) Melati Flower motifs, (b) Cempaka Flowers, (c) Tapak Jalak on interior element designs in the National library

Transformation of Betawi culture of Melati Flower, Cempaka Flower, Tapak Jalak on interior element design in the National Library applies topological transformation (geometry) to be used with a fixed, unchanging form of ornament, no surface that is damaged or changed.

Melati flower ornaments are on each side of the bookcase. The Betawi ornament serves to beautify with high aesthetic value and is also a symbol of cheerfulness, fragrance, and friendliness towards space users. Jasmine Flower Ornaments symbolize that the Betawi community is always open to anyone who wants to visit their village.

Portable diffuse patterned Betawi ornament with Melati Flower motif, Cempaka Flower, Tapak Jalak on interior element design has a high aesthetic value and excellent acoustic absorption so that the application to the National Library is suitable. The application of the Betawi culture to the National Library also serves to introduce and preserve the results of Betawi culture.

4.2 The results of the Betawi Ornament Design Applied in Space Public Interior Elements Made of Portable Difusor at the Function Hall

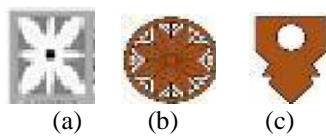


Figure 3: Betawi ornaments with (a) Melati Flower, (b) Cempaka Flower, (c) Gigi Balang motif on interior element design in the Function Hall.

Ornament Transformation of Betawi culture with the Melati Flower and Cempaka Flower motif in the design of interior elements at the hall function applies topological transformation (geometry) to be used with a fixed, unchanging ornament, no surface that is damaged or changed. Reversal transformation (inverse); applied to Gigi Balang ornaments, with the shape behind the image. The figure of the object

to be transformed where the image of the object is changed to the opposite image

Cempaka flower ornaments made from portable diffuser are designed for the wall to the left of the function hall. Cempaka flower ornaments mean having a high position, this means that the users of this space are expected to have a noble position. Cempaka flowers are also called Kantil flowers, while Kantil means always remembered or followed.

Gigi Balang ornament made from portable triangle-shaped lined with grasshopper teeth that symbolize that life must always be honest, diligent, tenacious and patient. The original Gigi Balang ornament is the tooth of the grasshopper. Grasshoppers can break wood by working continuously and for a long time but overall it can mean 'strong defense' and courage. Philosophy Grasshopper in breaking wood is the main principle that is held firmly by the original Betawi community.

Portable diffusion with Betawi ornament motifs including Bunga Melati, Bunga Cempaka, Tapak Jalak has a high aesthetic value and excellent acoustic absorption so that the application in the function hall is suitable. The Betawi ornament design at the function hall serves to introduce and preserve Betawi culture.

V. CONCLUSIONS

Interior elements contribute to the quality of space, especially public spaces such as function halls and libraries. The design of interior elements made from portable diffuse with Betawi ornaments designed includes the development of his motives, philosophy, functions, and material specifications. The resulting design is the development of Betawi ornaments into public interior elements such as function halls and libraries for space acoustic quality, user comfort, introducing Betawi cultural results, aesthetics, and efforts to preserve them. The design of interior elements with Betawi Culture ornaments is innovative with the application of portable acoustic materials to improve the quality of space functions, the convenience of users in private and the wider community and to preserve the Betawi culture so as not to become extinct. The need to think about the possibility of a new aesthetic scenario in a sustainable manner because the results of aesthetically valuable Betawi culture need to be informed to the general public with portable diffuse materials of quality as acoustics.

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REFERENCES

- [1] Nashir S, Endah S, Fabianus H, 2014, Perancangan *Diffusor* Akustik Portabel Sebagai Akustik Ruang, Untar Jakarta
- [2] Nashir S, Hartini, Emilius HH, 2016, Perancangan Dan Implementasi *Diffusor* Akustik Portabel Sebagai Unsur Dekoratif Ruang, Untar Jakarta
- [3] Amarena N; Grace H, 2015. Pendokumentasian Aplikasi Ragam Hias Budaya Betawi Pada Desain Interior Ruang Publik Café Betawi. Interior Design, School of Design, BINUS University, Indonesia.
- [4] Chaer, A 2012. *Folklor Betawi: Kebudayaan dan Kehidupan Orang Betawi*. Jakarta: Masup.
- [5] Sulaiman, et al. 2012. *Kajian Pengembangan Ornamen Betawi*. Jakarta: Dinas Pariwisata dan Kebudayaan DKI Jakarta.
- [6] Nurisma K, Chairil B. Amiuza dan Noviani Suryasari , 2017. Transformasi Ornamen Rumah Betawi dalam Unsur-Unsur Ruang , *Jurusan Arsitektur, Fakultas Teknik, Universitas Brawijaya , Alamat e-mail penulis: nurismakurniati@gmail.com*
- [7] Laseau, Paul. 1986. *Berpikir Gambar bagi Arsitek dan Perancang*. Bandung: ITB.
- [8] Debra H Ph.D, 2017, *A Material World: A Comparative Study of Flooring Material Influence on Patient Safety, Satisfaction, and Quality of Care*, Journal of Interior Design, Interior Design Educators Council
- [9] Matthew Ziff 2004, is Associate Professor in the Interior Architecture Program at Ohio University. Recently he has published a book review in the Journal of Aesthetic Education. Journal of Aesthetic Education, Vol. 38, No. 4, Winter 2004, Board of Trustees of the University of Illinois. Published by: University of Illinois Press Stable URL: <http://www.jstor.org/stable/3527372> Accessed: 23-02-2016 02:52 UTC
- [10] Mano, H. and Oliver, R.L. 1993 ‘Assessing the dimensionality and structure of the consumption experience: evaluation, feeling, and satisfaction’, *The Journal of Consumer Research*, Vol. 20, No. 3, December, pp.451–466.
- [11] Givechi, R. and Velasquez, V. 2004, ‘Positive space’, in McDonough, D., Hekkert, P., van Erp, J. and Gyi, D. (Eds.): *Design and Emotion: The Experience of Everyday Things*, Taylor and Francis, London, pp.12–17. *Jendela Krapyak*. 2013, 19 Juli. Diakses dari <http://anggapermadi91.blogspot.com/2013/07/vbehaviorurdefaultvml.html>
- [12] François Ranger, Steve Vezeau & Monique Lortie, 2018, *Traditional product representations and new digital tools in the dimensioning activity: a designers’ point of view on difficulties and needs.* , The Design Journal, 21:5, 707-730, DOI: 10.1080/14606925.2018.1494795
- [13] Pohlmeier, A.E. & Desmet, P.M.A. 2017. *From good to the greater good*. In J. Chapman (ed.) The Routledge handbook of sustainable product design. London: Routledge. Pp. 469-486.
- [14]. Admin. 2013, 16 Juli. Ornamen-ornamen pada Rumah Betawi. <http://cintebetawi.com/2013/07/16/ornamen-ornamen-rumah-betawi/>
- [15]. Anders Warell, 2011. Interior aesthetics: An experience- focused approach for the design of brand specific automotive identity. International Journal of Vehicle Design · June 2011. DOI: 10.1504/IJVD.2011.040587
- [16]. Arizal, R. 2012, 24 Mei. Rumah Adat Betawi. Diakses dari <http://rizky-arizal.blogspot.com/>
- [17]. Arum, R. 2012. Liyan Dalam Arsitektur Betawi: Studi Kasus pada Rumah Betawi Ora di Tangerang Selatan. Depok: Tesis Universitas Indonesia.
- [18]. Ching, Francis D.K. 2000. *Arsitektur: Bentuk, Ruang, dan Tatanan*. Jakarta: Erlangga.
- [19]. Francis D. K. Ching, 2003, *Architectural Graphics, Fourth Edition*, Fourth Edition , John Wiley & Sons, Inc. Published by John Wiley & Sons, Inc., New York.

- [20]. Jendela Krapyak. 2013, 19 Juli.
Diakses dari
<http://anggapermadi91.blogspot.com/2013/07/vbehavi-orurldefaultvmlo.html>
- [21]. Moectar, M., Sarwadana, S., & Semarajaya, C. 2012. Identifikasi pola permukiman tradisional kampung budaya betawi Setu Babakan, kelurahan Srengseng Sawah, kecamatan Jagakarsa, kota administrasi Jakarta Selatan, provinsi DKI Jakarta. *E-Jurnal Agroekoteknologi Tropika*, 1(2), 135–143.