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Cawangan Perak

e - Proceedings



**Proceeding for International Undergraduates Get Together 2024 (IUGeT 2024)**  
"Undergraduates' Digital Engagement Towards Global Ingenuity"

**1st Edition**



Organiser :

**Department of Built Environment Studies and Technology, College of Built Environment, UiTM Perak Branch**

Co-organiser :

**INSPIRED 2024. Office of Research, Industrial Linkages, Community & Alumni (PJIMA), UiTM Perak Branch**

**Bauchemic (Malaysia) Sdn Bhd**

**Universitas Sebelas Maret**

**Universitas Tridianti (UNANTI)**

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## The Chameleon Public Seating

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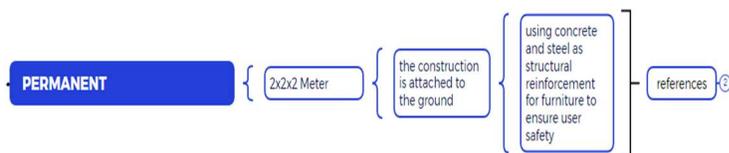
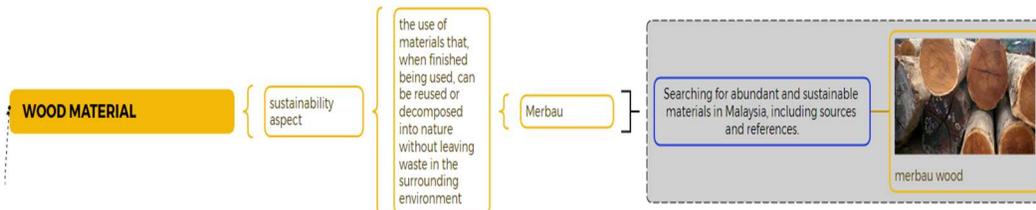
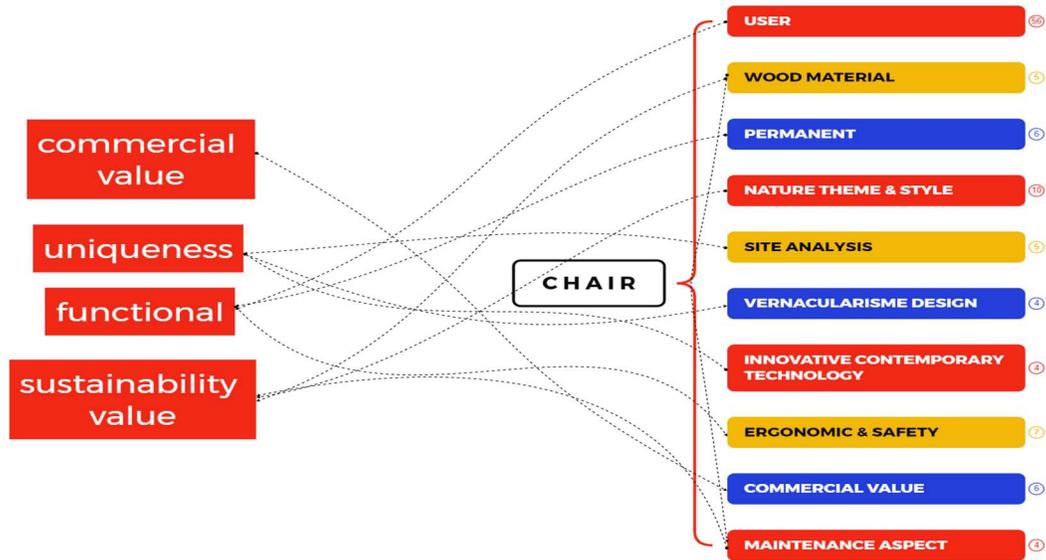
### ABSTRACT

This project aims to create a public seating design that harmonizes with nature by collaborating Malay vernacular technology with contemporary advancements. The methodology involves an in-depth investigation of Malay vernacular culture and the integration of modern wind turbine technology. The research seeks to identify how traditional elements can be effectively combined with cutting-edge innovations to produce functional and aesthetically pleasing public furniture. The outcome of this project is a piece of furniture that exemplifies a successful collaboration between traditional Malay techniques and contemporary technology. This hybrid design not only respects cultural heritage but also embraces sustainable practices through the use of renewable energy sources. The findings highlight the potential of incorporating vernacular wisdom into modern design, demonstrating that such an approach can result in sustainable and visually appealing solutions. This project underscores the importance of interdisciplinary collaboration in design, showcasing how traditional knowledge and modern technology can coexist and enhance each other, ultimately contributing to environmentally friendly and culturally sensitive public spaces.

**KEYWORDS:** Vernacular, contemporary, nature, sustainable energy, public seating

### DESIGN DESCRIPTION

The Chameleon is a public seating installation that integrates Malay vernacular culture with contemporary technology. This seating is permanently installed in the middle of an open park surrounded by trees. Therefore, we aim to design seating that harmonizes with the surrounding nature. The concept of Malay vernacular is inherently connected to nature. Malay vernacular can be seen through the use of merbau wood, as used in traditional Malay houses, and the kelarai pattern in The Chameleon's visual arrangement. Contemporary technology is integrated to reinforce the structure of the seat with a steel frame. The Chameleon also provides charging stations for mobile phones and wireless Wi-Fi, considering its location in a modern university area with digital-based learning. Sustainability is considered through waste management in both pre-production and post-production stages by utilizing tree branches for the backrest structure. Additionally, leftover materials are minimized by using them in small kelarai patterns arranged on the seat. The electricity source is also derived from kinetic wind energy. The wind turbines are designed to resemble the surrounding trees. Hence, this seating installation is named "The Chameleon" which can camouflage itself with its surroundings. It is a human creation camouflaged among God's natural creations. Furthermore, as public furniture, we prioritize inclusivity through ergonomic dimensions. The seating's outward circular shape allows for ample circulation pathways for users.



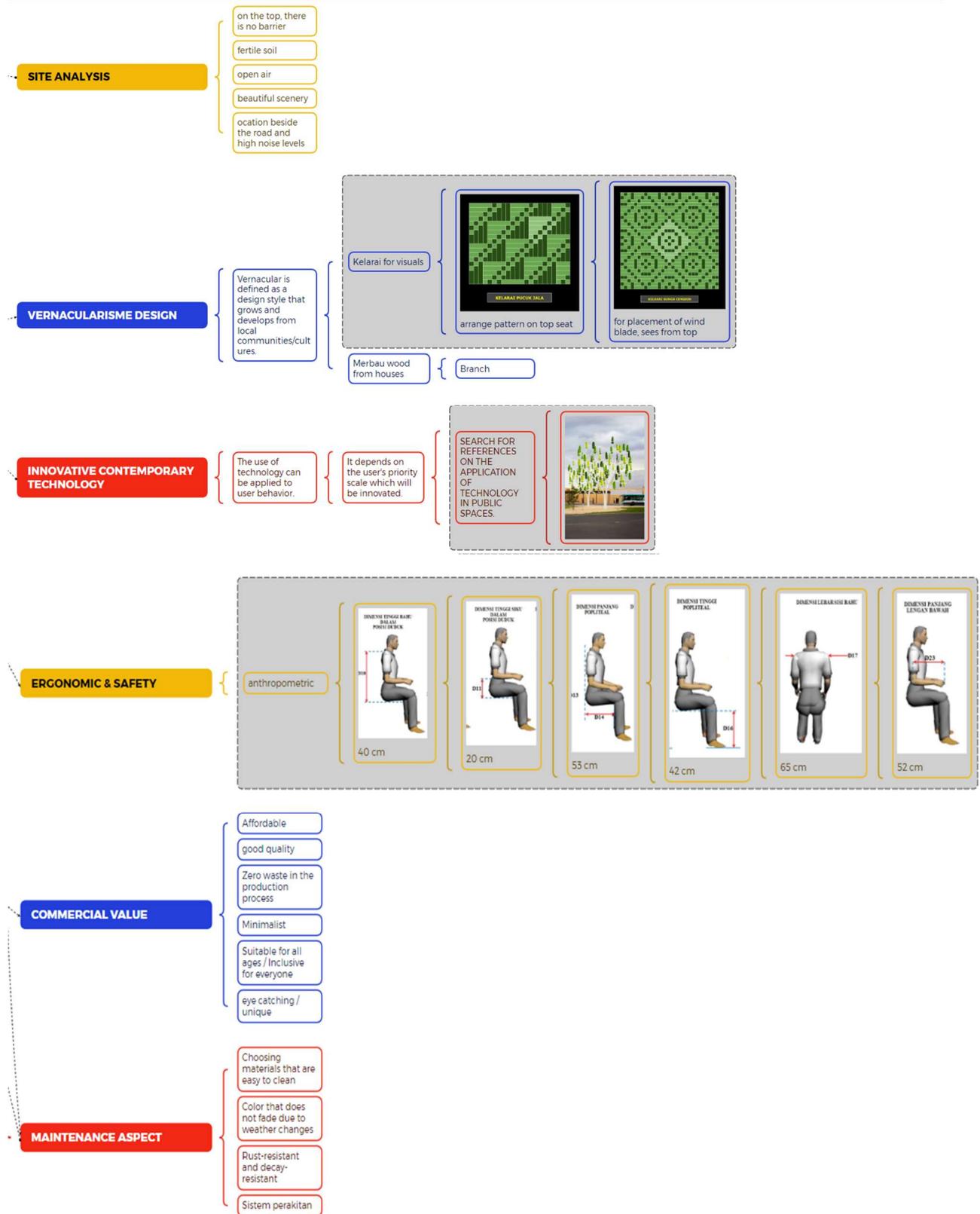


Figure 1: The Chameleon Public Seating

## **NOVELTY AND UNIQUENESS**

The Chameleon combines Malay vernacular elements with contemporary technology by incorporating merbau wood material, kelarai patterns, and wind energy harnessing. The windmill's pole uses steel material with kinetic sculpture blades and the placement pattern of the blades resembles the bunga cengkih kelarai pattern when viewed from above. Additionally, the pucuk jala kelarai pattern is applied to the top wooden arrangement on the seat. The windmill also directly supplies electricity for users to charge their phones, with the electricity sourced from the wind turbine.

## **BENEFITS TO MANKIND**

The Chameleon is designed with inclusivity in mind, maximizing its function as public seating. Given its location in a university area, we designed the seating to accommodate both individual activities and community use. This is crucial as group interactions need to be facilitated among students. Increasing individualism and antisocial behavior can be minimized, in part, by creating an inclusive and open design in nature. This allows students to interact comfortably and relax with others. In addition, research by Bratman, G. N., Hamilton, J. P., & Daily, G. C. (2012) shows that outdoor activities can improve cognitive benefits (increased working memory performance). Additionally, The Chameleon uses natural materials, such as easily found merbau wood. Production waste is also minimized to utilize materials effectively and efficiently. Efficiency is further supported by the presence of wind turbines as a sustainable source of electrical energy.

## **COMMERCIAL POTENTIAL**

The Chameleon is suitable for public and community facilities. Its permanent design allows for long-term use, accommodates many people, and has ample circulation areas. The charger with renewable energy sources can be used as an energy-saving step, with stable or even zero consumption costs. Merbau wood and steel metal materials are also easily sourced from the surrounding area.

## **CONCLUSION**

Combining traditional vernacular technology and contemporary technology into design solutions is always beneficial. Traditional technology has undergone years of research, adapting to the natural conditions of the area. Their discoveries are significant because nature is not an aspect we can control. This traditional technology has continued to evolve, but sometimes the advantages of traditional methods are lost in that development. The movement towards sustainability arises from the diminishing values of love for nature amid modernization. Now, humanity is working to restore nature to a stable condition. However, we should not revert to primitive ways, responsibly utilizing contemporary technology is also a good step to address shortcomings and strengthen traditional technology.

## **ACKNOWLEDGEMENT**

Thank you to all team members who have participated and worked hard so that we could successfully complete this project.

## **REFERENCES**

Bratman, G. N., Hamilton, J. P., & Daily, G. C. (2012). The impacts of nature experience on human cognitive function and mental health. *Annals of the New York academy of sciences*, 1249(1), 118-136.

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Tarikh : 20 Januari 2023

Prof. Madya Dr. Nur Hisham Ibrahim  
Rektor  
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Kelulusan daripada pihak tuan dalam perkara ini amat dihargai.

Sekian, terima kasih.

“BERKHIDMAT UNTUK NEGARA”

Saya yang menjalankan amanah,

**SITI BASRIYAH SHAIK BAHARUDIN**  
Timbalan Ketua Pustakawan

*nar*

*Setuju.*

*27.1.2023*

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