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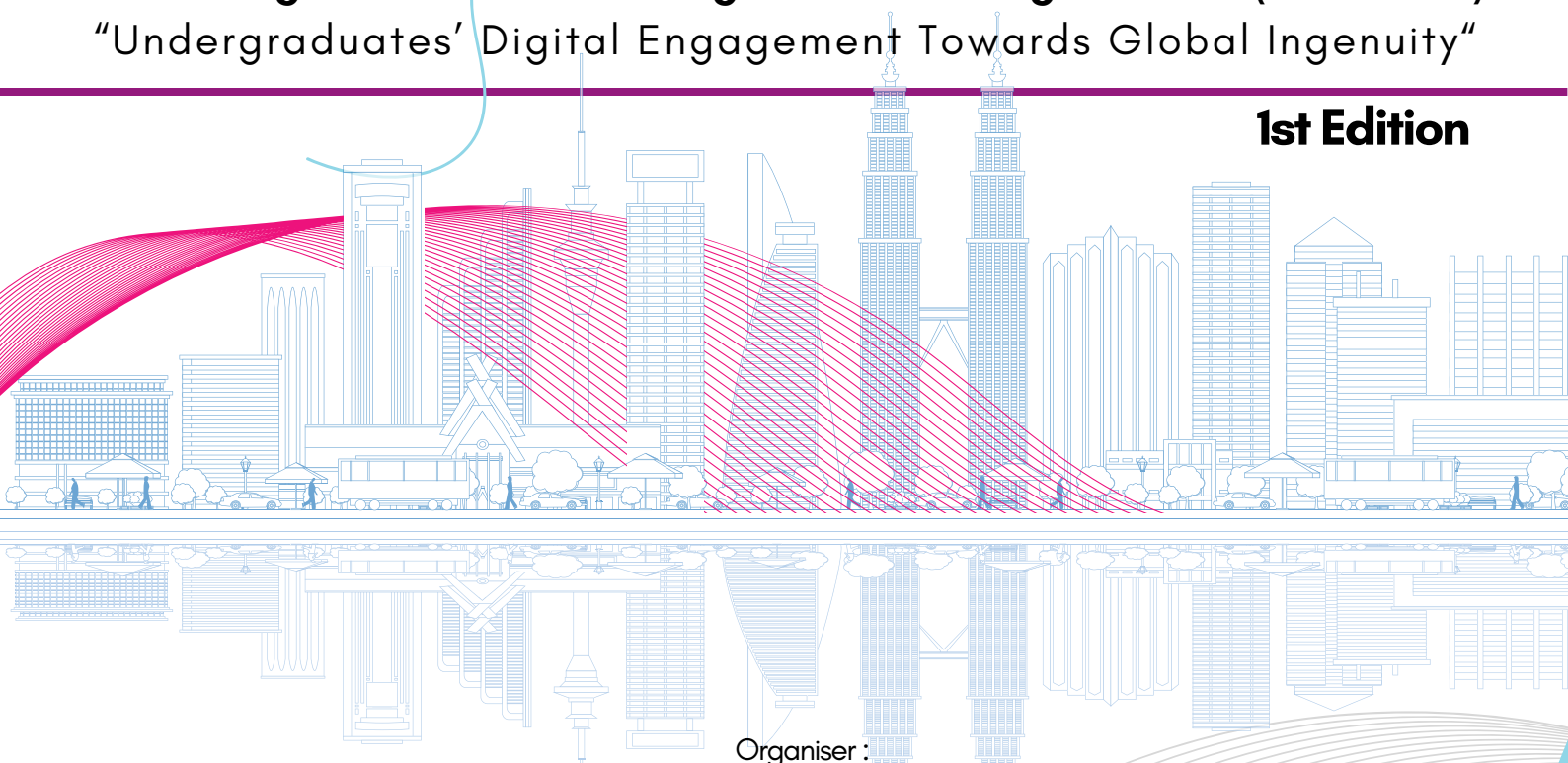
"Undergraduates' Digital Engagement Towards Global Ingenuity"

1st Edition



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TerraTimber Nexus

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ABSTRACT

This abstract proposes an innovative approach to address the Fusion Timber Challenge by creating an eco-friendly centre for students at Universiti Teknologi MARA (UiTM), Seri Iskandar, Perak. This study investigates the incorporation of eco-friendly practices into architectural design, with a specific focus on the use of fusion timber, a sustainable alternative to traditional timber materials. The suggested eco-friendly hub aims to create a conducive environment for student activities while minimising its environmental impact. This involves integrating waste reduction, renewable resource usage, and energy efficiency concepts into the design process. The hub aims to reconcile usefulness, aesthetics, and environmental responsibility in a single structure by utilising green technologies, sustainable materials, and passive design principles. The project emphasises the importance of community engagement and education in promoting sustainable practices among lecturers and students. The hub serves not only as a physical space but also as an encouragement for positive behavioural change towards a greener future.

KEYWORDS: Fusion timber challenge, eco-friendly design, sustainable architecture, student hub, UiTM Seri Iskandar

DESIGN DESCRIPTION

The design of the eco-friendly hub for students at UITM Seri Iskandar, Perak, integrates several sustainable elements to create a comfortable and energy-efficient space. Embracing the concept of open space, the architecture harnesses natural wind currents to enhance ventilation throughout the hub. Strategically positioning openings and utilising passive airflow techniques minimises the need for artificial cooling systems like air conditioning and fans, thereby reducing electricity consumption. Additionally, incorporating a waterfall feature into the design serves a dual purpose. Not only does it add aesthetic appeal, but it also acts as a natural cooling mechanism. As the waterfall transforms moisture into vapor, it helps to mitigate the heat typically experienced in hot climates, further enhancing the comfort of occupants within the hub. In line with sustainable material choices, the design heavily relies on wood, particularly timber and bamboo. These materials not only offer durability and strength but also present a warm and inviting ambience, promoting a connection with nature. Drawing inspiration from vernacular architectural styles, elements such as pitched roofs made of clay tiles are incorporated to provide effective insulation against the intense heat of the Malaysian climate. This traditional approach not only adds cultural significance but also demonstrates a practical solution to thermal comfort. The target audience, including students, lecturers, and visitors, will benefit from the thoughtful design that prioritises sustainability, comfort, and functionality. The eco-friendly hub, through the integration of these elements, aims to foster a conducive environment for learning, collaboration, and relaxation while promoting environmental control among its occupants.

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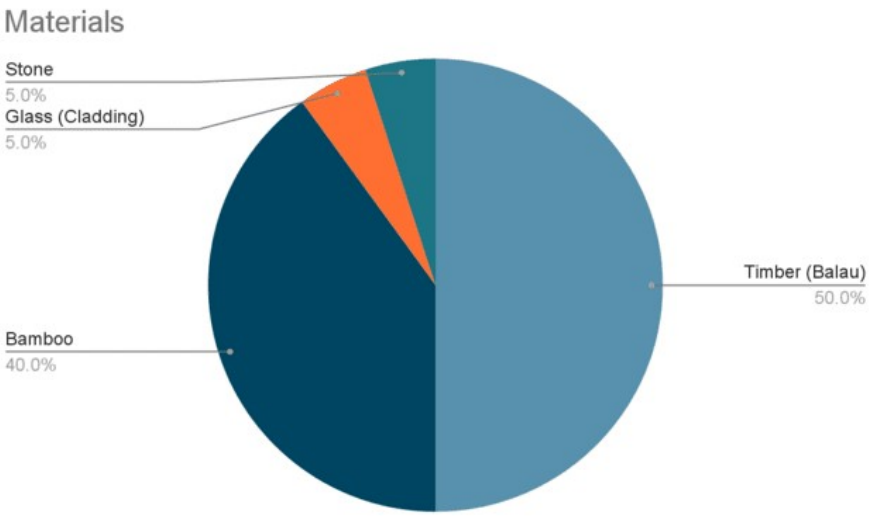

Figure 1: TerraTimber Nexus

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NOVELTY AND UNIQUENESS

A pitched clay roof represents a vernacular architectural style perfectly suited to the region's scorching climate. Otherwise, embracing sustainability, the solar chair stands proudly with its leaf-shaped canopy, symbolising eco-friendliness. However, the piece of resistance is the enchanting artificial waterfall created by a continuous water cycle process underneath the building. Encased in glass and bamboo, mesmerises and seamlessly blends with nature while highlighting the main concept of the public space.

BENEFITS TO MANKIND

The artificial waterfall brings multiple benefits to mankind. Firstly, it produces soothing white noise and increases humidity, creating a peaceful environment that is ideal for focused studying and improved concentration among students. Additionally, the waterfall design creates larger spaces for various activities, facilitating quality time for individuals or groups. The provision of power sockets for gadget charging enhances convenience and productivity. Overall, the open space and calming effects of the waterfall naturally promote comfort, contributing to enhanced well-being and a harmonious environment.

COMMERCIAL POTENTIAL

The commercial potential of our artificial waterfall is significant. Its unique design attracts attention and creates a distinct ambiance while also addressing practical concerns like maintaining humidity in hot climates. By incorporating solar panels, we reduce electricity costs, making it an eco-friendly and cost-effective solution. Using glass for natural lighting enhances the aesthetic appeal and energy efficiency. Targeting students, lecturers, and visitors in public spaces, especially near institutions like UiTM Seri Iskandar, ensures a steady stream of potential customers. Moreover, it doubles as a recreational spot for visitors, adding value and versatility to the location.

CONCLUSION

In conclusion, the eco-friendly hub at UiTM Seri Iskandar, Perak, represents a pioneering step towards sustainable public space design, addressing the Fusion Timber Challenge with creativity and environmental consciousness. By seamlessly integrating vernacular architectural elements with modern eco-friendly practices, such as the innovative use of fusion timber and the captivating artificial waterfall, this project not only provides a conducive space for students but also serves as a beacon of inspiration for sustainable design. With its emphasis on community engagement, education, and practical solutions for environmental stewardship, the hub stands as a testament to the possibilities of harmonising functionality, aesthetics, and ecological responsibility. As we embark on a journey towards a greener future, initiatives like this exemplify the transformative power of design in shaping a more sustainable and resilient world.

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Taking this chance, I want to express my gratitude to Universiti Teknologi MARA (UiTM) Seri Iskandar, Perak, and the International Undergraduates Design Competition 2024 (IUDeC 2024) for offering us this chance to work together and share knowledge throughout this project. Other than that, not forgetting our lecturer, who sacrificed his time to guide us. We would also like to thank all the team members who are willing to commit their time and energy to complete this task. This project would not have been possible without their assistance.

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"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

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