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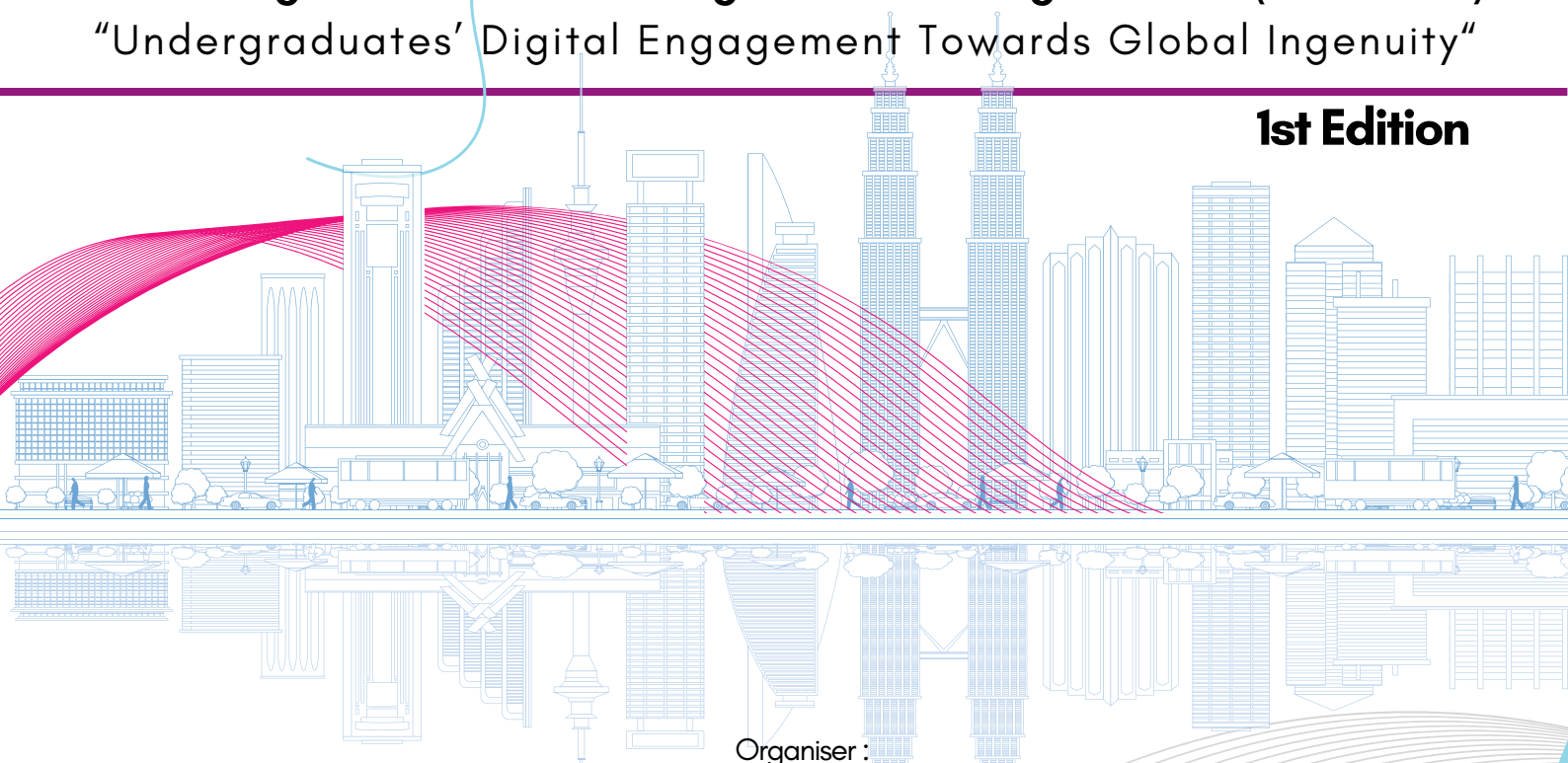
Proceeding for International Undergraduates Get Together 2024 (IUGeT 2024)

"Undergraduates' Digital Engagement Towards Global Ingenuity"

1st Edition



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Co-organiser :

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Co.lony, Student Eco Hub

Raja Nur Awadah Raja Anuar[1*], Batrisyia Nur Adlina Kamil Adli[2], Nur Aliya Maisara Muhammad Nazri[3] & Abdul Hamid Mohamed[4]

[1,2,3,4]Programme of Interior Design Technology, Department of Built Environment Studies & Technology, College of Built Environment, Universiti Teknologi MARA (UiTM) Perak Branch, 32610 Seri Iskandar, Perak, Malaysia

*2022816738@student.uitm.edu.my

ABSTRACT

The Co.lony, Student Eco Hub showcases a fusion of materials, marrying timber and glass to form an architectural marvel. Drawing inspiration from the intricate structure of honeycombs, this design embodies a unique fusion of tradition and innovation in architectural and interior design. By seamlessly blending conventional elements with cutting-edge techniques, this project aims to create visually captivating and structurally robust structures. The focal point of this design is the amalgamation of hexagonal shapes, glass, and wood within timber-based constructions, with a deliberate emphasis on harmonising these materials to achieve a harmonious blend of aesthetics and functionality. Central to this fusion concept are honeycomb structures, renowned for their inherent strength despite their lightweight nature. Through the strategic integration of hexagonal panels into timber frameworks, designers have succeeded in reinforcing structural integrity while simultaneously reducing the overall weight of the structures. This approach not only enhances sustainability but also contributes to cost-effectiveness in construction practices. The inclusion of glass elements further elevates the design, infusing a contemporary flair and facilitating the penetration of natural light into the interiors. Whether in the form of transparent or translucent panels, glass components serve to accentuate the beauty of the wood and honeycomb elements, creating a mesmerising interplay of light and colour throughout the space. Wood, with its innate warmth, versatility, and organic allure, stands as the cornerstone material in this fusion timber design. Beyond providing essential structural support, wood imparts a sense of aesthetic charm and tactile appeal, harmonising seamlessly with the sleek modernity of glass and the efficiency of honeycomb structures. In essence, the Co.lony, Student Eco Hub embodies a harmonious convergence of nature-inspired design and innovative construction techniques. Through the fusion of timber, glass, and honeycomb, this project not only delivers striking visual aesthetics but also champions sustainability and efficiency in architectural endeavours.

KEYWORDS: Fusion materials, honeycomb structures, hexagonal shapes, sustainable construction

DESIGN DESCRIPTION

The fusion timber design concept seamlessly integrates hexagonal shapes, glass, and wood to craft architectural and interior elements that captivate the eye while upholding structural efficiency. This innovative approach aims to marry the inherent strength and sustainability of timber structures with the allure of coloured glass, resulting in spaces that seamlessly blend functionality with aesthetics. Transparent and coloured glass panels serve as focal points, infusing a contemporary essence into the design while allowing natural light to flood the interiors. This interplay of light and colour not only illuminates the space but also creates dynamic visual effects, enhancing the overall ambiance. Wood, as the primary material, imbues the space with warmth,

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versatility, and a timeless aesthetic. Its natural appeal complements the modernity of the structure, creating a harmonious juxtaposition of tradition and innovation. Moreover, the use of lightweight and durable materials, coupled with the inherent sustainability of wood, underscores the eco-friendly ethos of the design. The fusion of these materials also yields insulation properties, contributing to energy efficiency within the buildings. By incorporating glass elements and open spaces, the design enhances the overall mood and atmosphere of the environment by maximising natural light. Targeting UiTM Seri Iskandar students, lecturers, and staff, the design caters to individuals seeking spaces conducive to relaxation and productivity. From art installations to public buildings, this versatile design offers a captivating aesthetic that enriches the overall visitor experience. Adaptable to various architectural styles and applications, the design provides flexibility for creative expression. Glass panels, whether transparent or coloured, are tempered for safety and UV protection, further enhancing their durability. Additionally, customisable hexagonal shapes offer endless possibilities for customisation and innovation within the space.

NOVELTY AND UNIQUENESS

The novelty and uniqueness of this space design is the architecture itself. The architecture inspired by bees' wings and the building construction have various functionality. For example, the staircase design can be used as tables, chairs, and a stage. The majority of the lighting in this space design relies on natural lighting, rather than artificial lighting, to accentuate the architecture of the building. Coloured glass that is used in the building gives a contemporary style; it is enhancing the design visual and setting it apart from conventional solutions in the architectural and interior design landscape.

BENEFITS TO MANKIND

These space designs solve critical problems such as enhancing structural integrity while reducing weight, addressing key challenges in construction for both new builds and renovations. Natural light penetration improves building visual quality and reduces the need for artificial lighting. By optimising energy performance and reducing material waste during construction, it shows eco-friendly design practices. In terms of economic benefits, the use of lightweight materials and efficient manufacturing processes leads to cost-effective construction, resulting in savings on labour and material costs. As interior design students, we have the opportunity to explore new design concepts and construction methods. The social and cultural impacts of this space design contribute to community pride and identity by creating iconic architectural designs.

COMMERCIAL POTENTIAL

Our design is eco-friendly for the environment because it uses all natural and timeless materials, such as timber. All communities will love it, especially students, because they can use this space to do assignments and study. Furthermore, we will encourage all industry architects and interior designers to look into our fusion timber space design for its true potential. We believe our ideas for this space design are unique, beautiful, have strong characteristics, and have the potential to be commercialised.

CONCLUSION

In essence, the fusion timber design concept represents a harmonious marriage of form and function, sustainability and innovation, catering to a diverse range of needs while enhancing the overall quality of built environments.

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Figure 1: Front view


Figure 2: Rear view


Figure 3: Close up view

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REFERENCES

Morgan, H. (2011, May 16). "Transparent Honeycomb 'Treehugger' Pavilion Lights Up the Night in Germany": Inhabitat. https://inhabitat.com/transparent-honeycomb-treehugger-pavilion-lights-up-the-night-in-germany/

Omondi, E. (2018, November 26). "The Honeycomb Pavilion": Behance. https://www.behance.net/gallery/73003271/The-Honeycomb-Pavilion

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Sekian, terima kasih.

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Saya yang menjalankan amanah,

SITI BASRIYAH SHAIK BAHARUDIN
Timbalan Ketua Pustakawan

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