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# e - Proceedings

# IUGeT

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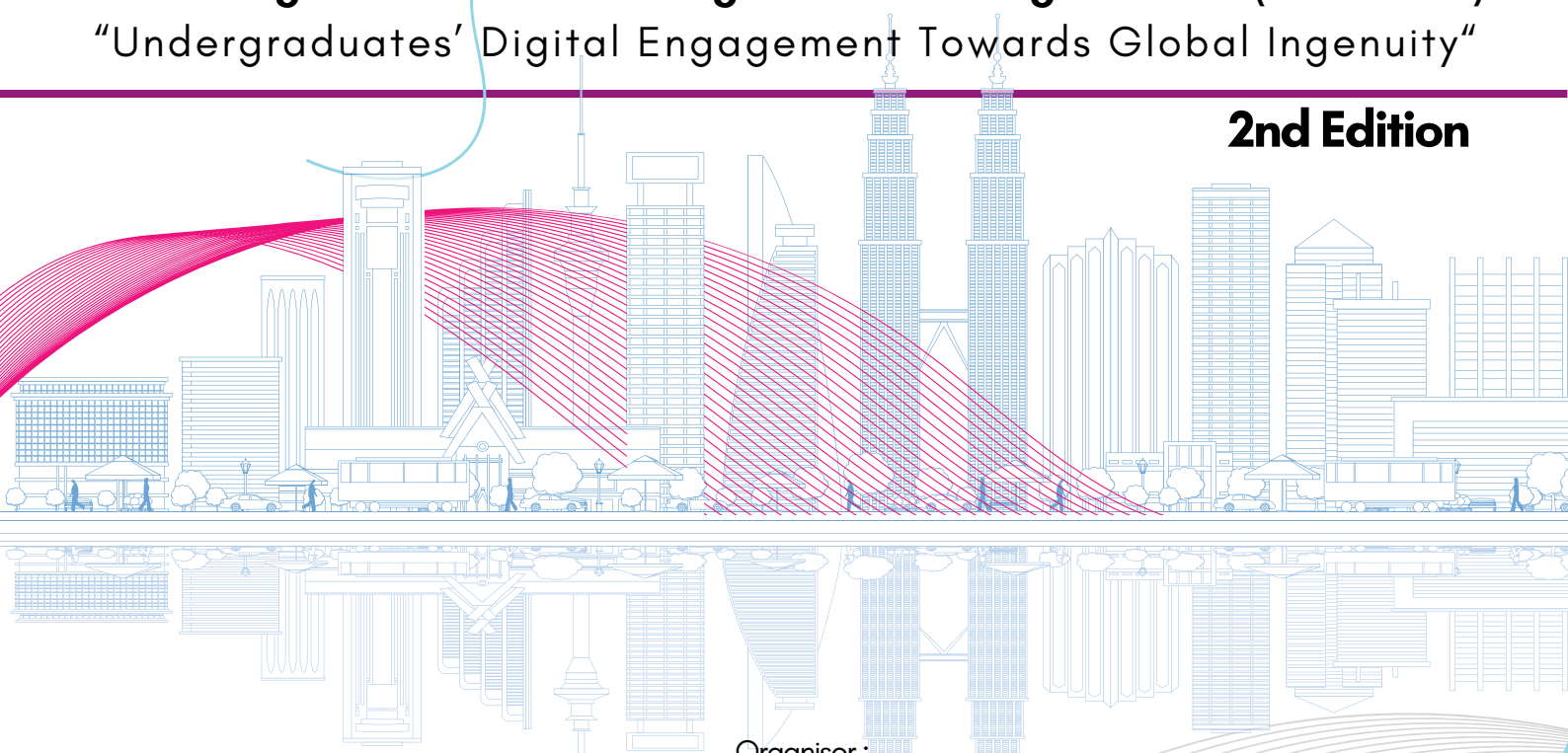
"Undergraduates' Digital Engagement Towards Global Ingenuity"

**2nd Edition**

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Co-organiser :

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

**Bauchemic (Malaysia) Sdn Bhd**

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# Hexa Cottage

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**ABSTRACT**
The Hexa Cottage is a versatile, eco-friendly structure designed for public use, ideal for university campuses and outdoor parks. Centered around a hexagonal shape, it combines Balao or Cengal timber, acrylic, concrete, and steel for durability and sustainability. The cottage offers shelter, seating, charging, storage, and a reading area, promoting social interaction, comfort, and community engagement. Its ergonomic and adaptable design enhances the overall campus experience, supporting learning and well-being. Equipped with solar panels for emergency charging and built to withstand natural elements, the Hexa Cottage provides a harmonious and aesthetically pleasing space that integrates seamlessly with its surroundings, encouraging physical activity and environmental consciousness.

**KEYWORDS:** University environment, multifunction seating design, eco- friendly, hexagon, cottage

**DESIGN DESCRIPTION**
The Hexa Cottage is a compact, hexagon-shaped structure designed for sustainability and versatility, providing a space for resting, charging, reading, and storage in outdoor settings. Built with durable materials like Cengal timber, acrylic, concrete, and steel, it combines aesthetics with environmental sustainability. Solar panels and eco-friendly materials further enhance its functionality, offering an accessible and harmonious environment for public use.The user experience is central to the Hexa Cottage design. It is intended to be intuitive and user-friendly, with clearly defined spaces for different activities. The seating is ergonomically designed for comfort, while storage areas are easily accessible. Solar panels are integrated seamlessly, allowing users to charge devices without needing to understand complex technology. The overall aesthetic is calming and inviting, encouraging users to spend time in the space. Cengal timber is the primary material used in the Hexa Cottage, chosen for its durability, resistance to environmental factors, and natural beauty. The use of timber in conjunction with concrete and steel creates a robust structure that can withstand outdoor conditions while maintaining a natural look. The timber's warm tones and textures enhance the cottage's aesthetic appeal, blending seamlessly with natural surroundings. The Hexa Cottage is designed for a wide range of users, including park visitors, hikers, campers, and anyone spending time in outdoor recreational areas. It is also ideal for those who value sustainability and eco-friendly design. The structure caters to individuals looking for a temporary rest area, a place to work outdoors, or a shelter from sudden weather changes.The Hexa Cottage serves as a rest area or shelter in recreational parks, campsites, and outdoor workspaces, offering amenities like charging stations, storage, and a tranquil workspace. It also functions as an emergency shelter during unexpected weather conditions. The Hexa Cottage offers sustainability through eco-friendly materials and solar power, while its durable construction with Cengal timber, concrete, and steel ensures long-lasting

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performance. Its versatile, aesthetically pleasing hexagonal design supports various uses and seamlessly blends with natural surroundings.The Hexa Cottage is more than just a shelter; it is a thoughtful integration of design, sustainability, and functionality, offering a practical solution for enhancing outdoor experiences while respecting the environment, its features, functionality, and unique selling points. Some key elements to consider include overview and purpose, key features, functionality and performance, user interface and user experience, fusion timber aspects, target audience, applications and use cases, benefits and advantages, technical specifications, and other relevant elements.

Figure 1: The Hexa Cottage is designed to comfortably accommodate up to four people at once

Figure 2: The seating is made from concrete, while the body structure, crafted from Cengal timber, adds a cozy touch to the cottage

**NOVELTY AND UNIQUENESS**

The Hexa Cottage features a unique hexagonal design that blends Cengal timber, acrylic, concrete, and steel for durability and aesthetic appeal. Unlike typical outdoor structures, it offers multifunctionality as a shelter, seating area, charging station, and storage unit, all within a compact, eco-friendly form. Solar panels provide energy, enhancing its sustainable design. The cottage harmonizes with nature, presenting a fresh approach to outdoor living spaces that are both practical and visually pleasing. This design redefines public shelters, promoting environmental stewardship while meeting diverse needs.

**BENEFITS TO MANKIND**

The Hexa Cottage enhances outdoor spaces by offering a multifunctional, eco-friendly design that promotes comfort, convenience, and sustainability through the use of solar energy and durable materials. It serves as a cost-effective, low-maintenance solution that fosters community interaction while showcasing sustainable architecture adaptable to diverse environments.

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## COMMERCIAL POTENTIAL

The Hexa Cottage meets the rising demand for sustainable, multifunctional outdoor structures with its unique design and material fusion, offering a competitive edge over traditional shelters. Its modular production model, cost-effectiveness, low maintenance, and adherence to environmental regulations enhance profitability and market credibility, while design patents protect its innovative features.

## CONCLUSION

The Hexa Cottage is an innovative, eco-friendly solution for public spaces, featuring a durable, aesthetically pleasing hexagonal design with Cengal timber and concrete that serves as a shelter, seating area, charging station, and storage unit, enhancing quality of life and promoting sustainability. Looking ahead, future developments could explore modular expansions, customizable designs for different climates, and enhanced smart technologies, such as integrated sensors for energy efficiency. This would further solidify the Hexa Cottage's role as a versatile, scalable solution for outdoor living and public spaces worldwide.

## ACKNOWLEDGEMENT

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Aobing.Y, Xiong.W & Yao.H, (2024). Research on Design Evaluation of Wooden Outdoor Seating System. 2024 International Conference on Urban Construction and Transportation (UCT 2024)

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