

# e - Proceedings



## Proceeding for International Undergraduates Get Together 2024 (IUGeT 2024)

"Undergraduates' Digital Engagement Towards Global Ingenuity"



Co-organiser:

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

Bauchemic (Malaysia) Sdn Bhd

Universitas Sebelas Maret

Universitas Tridinanti (UNANTI)

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### A Natural Marvel: The Shell-Ter

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#### ABSTRACT

The "Shell-ter" is a pavilion which draws inspiration from the Nautilus also known as the living fossil. It is designed not just as a tribute to its shell-shaped beauty but also as a functional shelter for students, perfectly embodying its name. Crafted from teak wood, this multipurpose area aims to provide a relaxing environment where students can unwind and engage in various activities across its five distinct units, each serves different purpose from one another. Not only that, water curtain system is also installed which helps enhancing the oceanic ambience, further immersing students in a serene atmosphere. To top it off, solar panels are seamlessly integrated to power student's electronic devices, ensuring modern sustainability align with comfort and functionality within The "Shell-ter".

KEYWORDS: Functionality, living fossil, multipurpose area, Nautilus, teak wood

#### **DESIGN DESCRIPTION**

We delve into the fascinating world of the Nautilus and we explore the evolving demands of students in higher education, aiming to create spaces that enhance their overall experience while seamlessly integrating technology by creating spiral layout to accessing dynamic spaces for learning, collaboration, and reflection. Thus, the combination of red brick and brown finishing on top of the teak wood are perfect for our pavilion not only to emphasizes the attractiveness, natural hue of the nautilus may also be noticed from distance due to the bright color and unlikeness of the structure. Furthermore, the key to a successful pavilion project is from the selection of materials, we selected particular wood that can withstand the challenging weather of conditions in Malaysia. The chosen timber must exhibit durability, resistance of humidity, rain and many other factors that can effect the quality of the timber itself. Not only that, we also utilized rainwater by collecting it to create a water curtain that will adds a sense of tranquility and aids in natural cooling, as well as a reflecting surface that plays with light. In addition, we also engage with nature by placing Tecoma trees with black stone at the center as our main view to provide a sense of solidity and permanence. Just like the Nautilus adjusts to its surroundings, our spaces must suit a variety of purposes. Smart technology like solar, collaborative workstations, and charging ports enable learning to transcend physical barriers.

#### NOVELTY AND UNIQUENESS

The "Shell-ter" pavilion seems to be a thoughtful architectural project tailored to meet student requirements. Its design process, which draws inspiration from relevant subject matter, reflects a deep understanding of the intended use and the environment it will serve. The careful selection of materials and attention to the functionality of each component suggest a holistic approach to creating a space that is both practical and inspiring. Such a structure could serve as a dynamic educational or non-educational environment, fostering learning and creativity. Functionality of the



Shell-ter, It is serves as a pergola tunnel, inviting guests to relax in the shade and serving as a meeting place that also can be hosted small concerts.









Figure 2: Perspective view

Figure 3: Top view



Figure 4: Front elevation view

Figure 5: Side elevation view



#### **BENEFITS TO MANKIND**

We believe The "Shell-ter" indeed stands out for its innovative use of natural materials, which not only offers a sustainable building solution but also provides a tactile, hands-on learning experience for students. This approach aligns with the growing emphasis on eco-friendly materials such as solar in architecture and offers a unique educational opportunity for students at UiTM Seri Iskandar, Perak, to engage directly with the materials and construction methods that define their field. The practical experience gained from such projects is invaluable, fostering a deeper understanding of sustainable design principles and application in real-world scenarios.

#### **COMMERCIAL POTENTIAL**

The "Shell-ter" has a very high potential of its own. It's the use of natural material as its main structure components making it such a great option compared to other construction materials. It also creates an opportunity for the students in UiTM Seri Iskandar, Perak studying in architecture, design or any related fields to experience hands-on learning method in a much interesting way. On the other hand, cost analysis for pavilions like the "Shell-ter" involves considering life cycle costs and aiming for structures that are net zero for both water and energy. Furthermore, it could involve temporary installations for events or educational purposes, with a focus on reusability and minimal environmental impact.

#### CONCLUSION

In conclusion, the integration of technology in timber pavilions represents a harmonious blend of tradition and innovation. By combining age-old woodworking techniques with modern design and fabrication technologies, architects and engineers are able to create structures that are not only aesthetically pleasing but also sustainable and efficient. These advancements pave the way for future developments in the field of architecture, where the past and the present coalesce to inspire the designs of tomorrow.

#### ACKNOWLEDGEMENT

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Saya yang menjalankan amanah,

Setuju.

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