



**TAYLOR'S
UNIVERSITY**

Wisdom • Integrity • Excellence

BACHELOR OF SCIENCE (HONOURS) IN ARCHITECTURE



BLD61904 GREEN STRATEGIES FOR A BETTER DESIGN

ASSIGNMENT 2 : REFLECTIVE WRITE UP

TUTOR : TS. KHAIROOL

DATE

NAME

ID

16/07/25

TEHJYASHRI JIGNYASU JOSHI

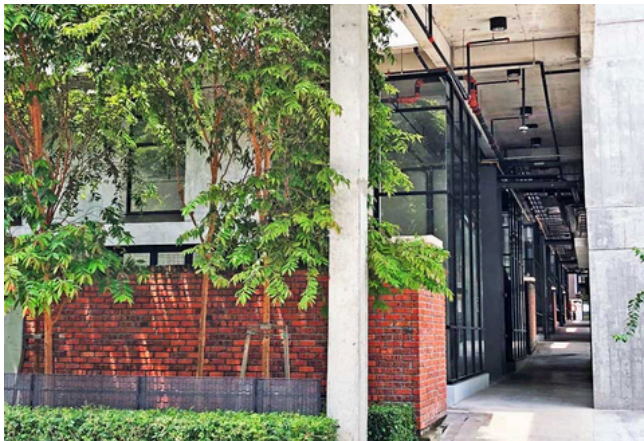
(0369765)

TABLE OF CONTENTS

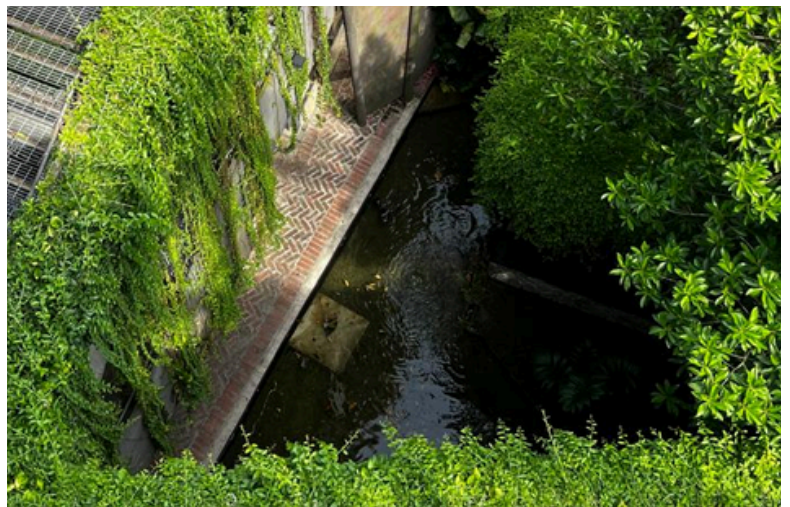
01	INTRODUCTION	03
02	KEY LEARNINGS	04
03	REFLECTION ON ASSG 1	09
04	CONCLUSION	10
05	REFERENCE	11

INTRODUCTION

As architecture students, the importance of passive strategies should be viewed not only as theoretical knowledge but also as an essential first step into creating and developing designs that respond and are contextually informed. As part of the assignment, I visited Tamarind Square, a mixed-use retail and business development in Cyberjaya, Selangor, Malaysia. It was designed by Tujuan Gemilang in 2018. It was meant to be a contemporary representation of what a Malaysian town square could be, combining community, commerce, and nature into one polyvalent space, all through the metals of architecture.



Tamarind Square showcases a heterogeneous use of passive green strategies with a multitude of levels of vegetation, communal spaces that are naturally ventilated, open-air walkways, and deep overhangs.



Every design element of Tamarind Square, from the exposed concrete and repurposed bricks to the tumbling vertical gardens and the reflected water elements, is firmly anchored in the tropical setting of Malaysia. In addition to lowering energy use, these features produce a cozy, aesthetically pleasing, and climate-responsive area that promotes community involvement and public interaction.

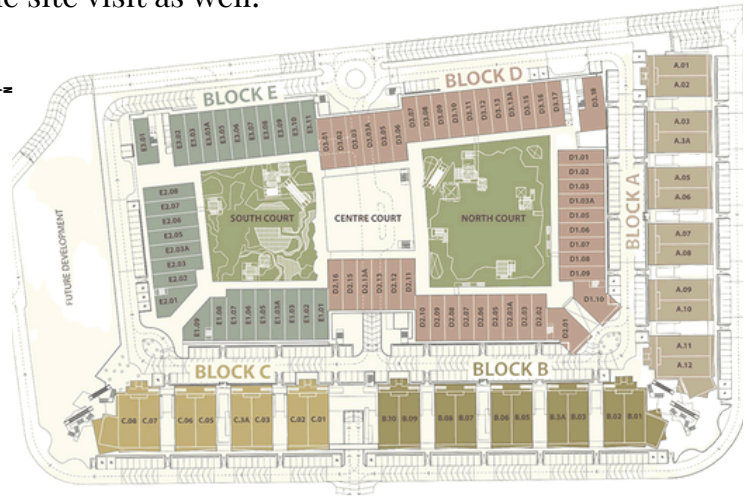
KEY LEARNINGS FROM THE VISIT



My visit to Tamarind Square gave me some important insights into how passive green solutions may be used successfully in the real-world architectural setting. Several crucial passive techniques were highlighted throughout the site visit as well.

SITE PLANNING & ORIENTATION

The general design of Tamarind Square revolves around a figure-8 arrangement with two outdoor courtyards at its core. By promoting cross circulation across the property, this spatial layout efficiently cools both the interior and outside areas without the need for mechanical devices.

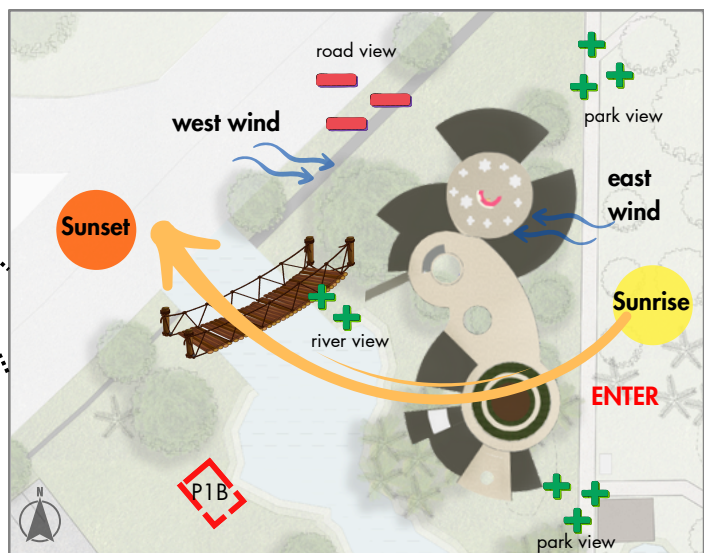
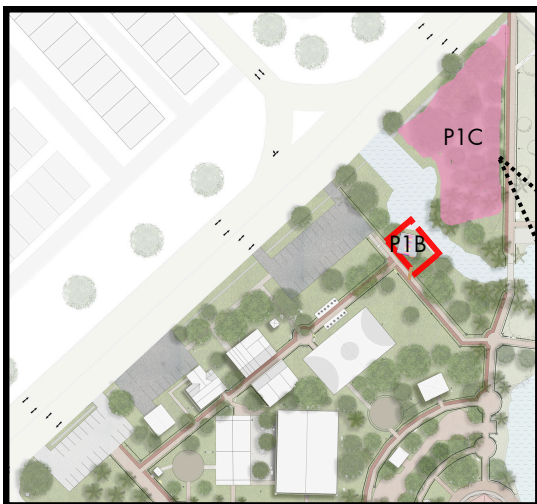


The building's orientation minimizes harsh east-west sunlight exposure, while maximizing diffused light from the north and south. The continuous circulation created by the connection of indoor and outdoor areas encourages natural movement.

MY BUILDING APPLICATION

- My building incorporates a radial layout also revolves around a central courtyard, creating a natural microclimate.
- I oriented active zones toward morning sunlight and placed quieter ones facing green buffers - a direct nod to sun and wind flow consideration.
- Indoor and outdoor transitions are seamless, just like in Tamarind Square - especially between the café, courtyard, and garden zones.

MY SITE CONTEXT



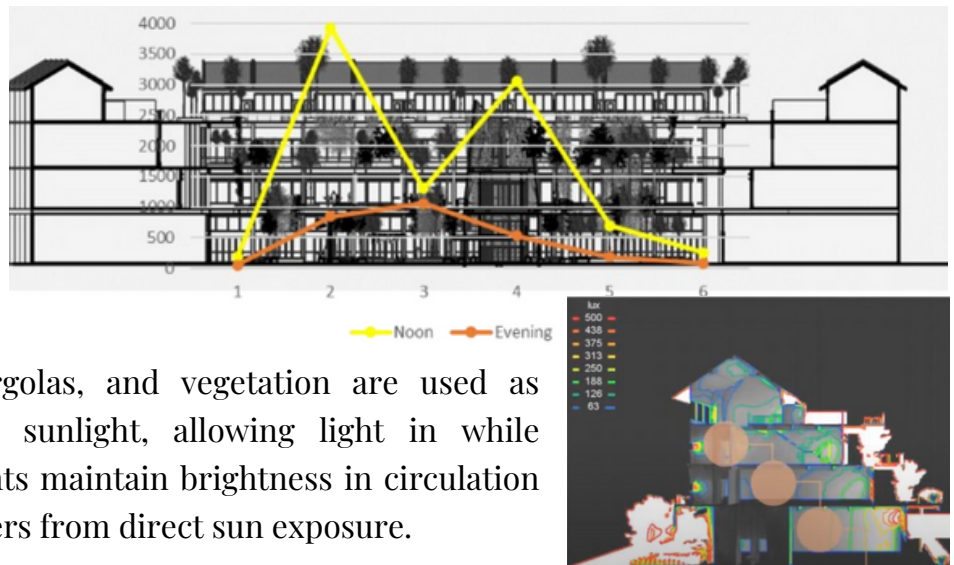
KEY LEARNINGS FROM THE VISIT

DAYLIGHTING

Tamarind Square demonstrates an effective approach to daylighting by using its open-air courtyards, exposed corridors, and large voids to allow natural light to penetrate deep into the building. The layout not only supports ventilation but also serves as a light well, distributing soft, indirect daylight across communal spaces without relying on artificial lighting during the day. This careful positioning of the building reduces glare and overheating, creating a visually comfortable environment.



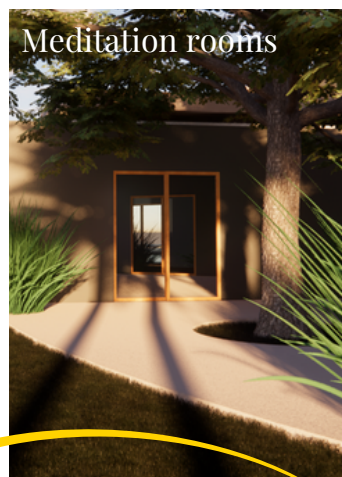
Average lux level at noon and evening at North Courtyard



Additionally, deep overhangs, pergolas, and vegetation are used as passive shading devices to filter sunlight, allowing light in while preventing heat gain. These elements maintain brightness in circulation and retail areas while protecting users from direct sun exposure.

MY BUILDING APPLICATION

- You placed active spaces like the multipurpose room and cafe where natural light enters gently, enhancing warmth and usability.
- Meditation rooms and rest pods receive filtered light, just like the shaded quiet nooks in Tamarind Square.
- Courtyard and vertical breaks help bring in diffused daylight to circulation zones, reducing artificial lighting use.

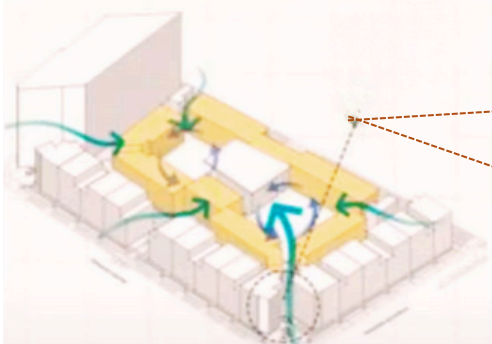


KEY LEARNINGS FROM THE VISIT

NATURAL VENTILATION



Most communal spaces, including the corridors, dining areas, and bookstores, were designed as open-air environments without enclosed walls or air conditioning. Designing the building with openings on opposing sides to allow for cross-ventilation, taking advantage of the prevailing winds to naturally cool the interior.

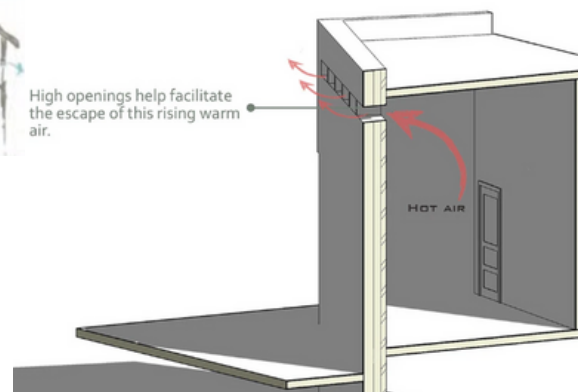


Cooler air was drawn in at lower levels, and hot air was able to escape vertically through open stairwells and elevated walkways. This stack effect lessens reliance on artificial cooling systems while also improving indoor air quality.



MY BUILDING APPLICATION

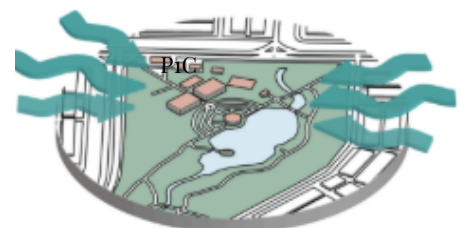
- I used openings that aligned with wind direction, creating cross-ventilation between cluster zones.
- Vertical breaks and air gaps between rooflines, which function like Tamarind Square's breezeway.
- My barrier-free loop allows air to circulate naturally, reducing reliance on mechanical cooling.
- Pitched roof design creates a natural double volume effect and better air ventilation circulation within the building spaces



Outdoor Cafe Space



My Building is orientated towards prevailing winds



KEY LEARNINGS FROM THE VISIT

FACADE DESIGN

Tamarind Square's facades incorporate a combination of deep overhangs, shaded balconies, and perforated metal screens, which help reduce direct solar heat gain. The materials used, such as exposed concrete, recycled bricks, and steel, have high thermal mass, helping to stabilize indoor temperatures throughout the day.

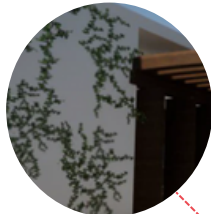


The facade openings are strategically placed to balance daylight penetration with heat control, ensuring user comfort while minimizing energy use. The intention is to decrease energy consumption and advance sustainability by reducing reliance on mechanical systems for lighting, heating, and cooling.

MY BUILDING APPLICATION

- I incorporated shaded corridors and overhangs, especially along the courtyard edge and cafe/gallery front.
- My use of rammed earth and precast concrete are chosen cause of its low embodied energy and climate appropriateness
- Filtered light + texture creates a soft spatial atmosphere, especially visible in my lounge and meditation areas.

Vertical Green walls



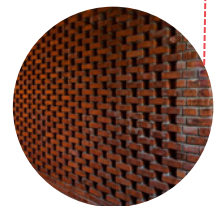
Rammed Earth



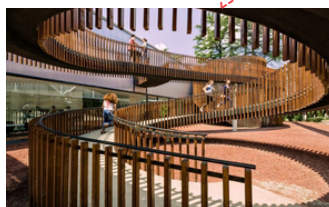
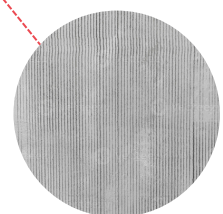
Perforated brick walls that filter sunlight and allow air to flow through, creating dappled lighting conditions ideal for meditation and sensory spaces



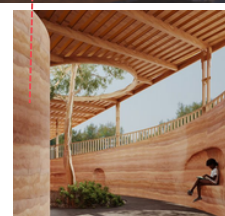
Ventilation Wall



Concrete



Timber louvre shading elements that reduce direct sun exposure while maintaining openness and connection to the outdoors.

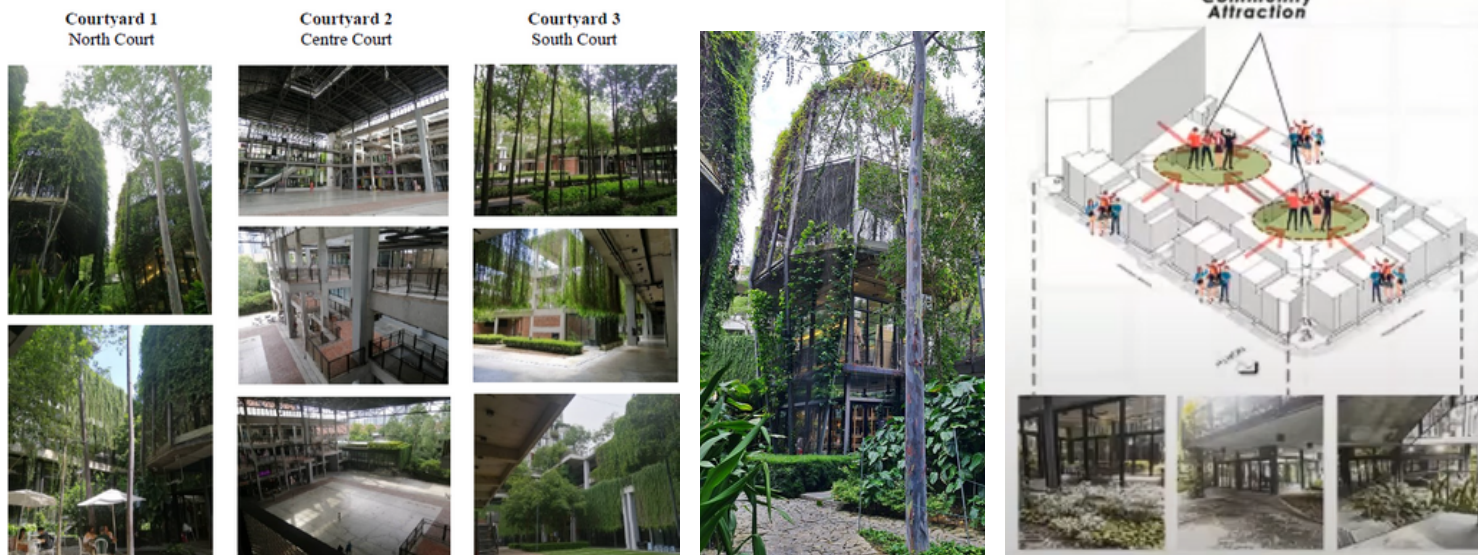


Courtyard example

KEY LEARNINGS FROM THE VISIT

STRATEGIC LANDSCAPING

A key component of the project's passive cooling plan is landscaping. The Tamarind Square maximises its usage of landscaping as a passive design strategy to create a comfortable and community-focused environment. The rooftop gardens, vertical plantings, and shaded tree canopies are examples of multi-level greenery that improve the building's overall microclimate, lower the urban heat island effect, and cool the surrounding air.

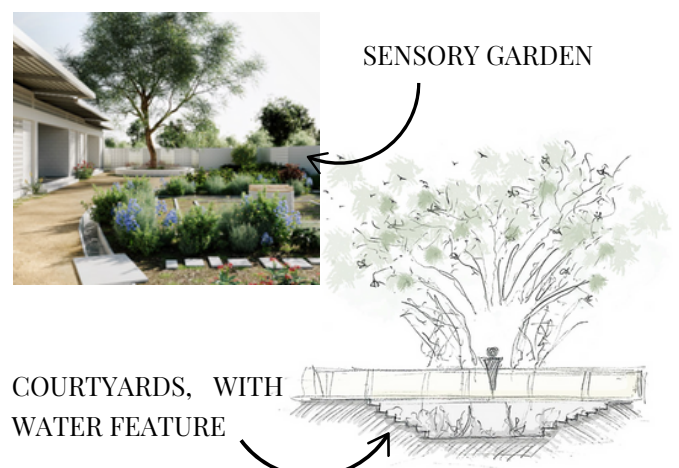


As the trees and other greenery help reduce temperatures and make outdoor environments more comfortable. Courtyards are furnished with water elements, including fountains and shallow pools, which help with evaporative cooling and give patrons a peaceful, biophilic environment.

MY BUILDING APPLICATION



- I have a Sensory Garden and Breathing Room that are direct expressions of this strategy, they offer calm, cool, restorative green spaces.
- I also use soft landscaping around the courtyard and throughout circulation, supporting both thermal comfort and biophilic experience.
- My green buffers near quiet zones function much like the planted edges at Tamarind Square.

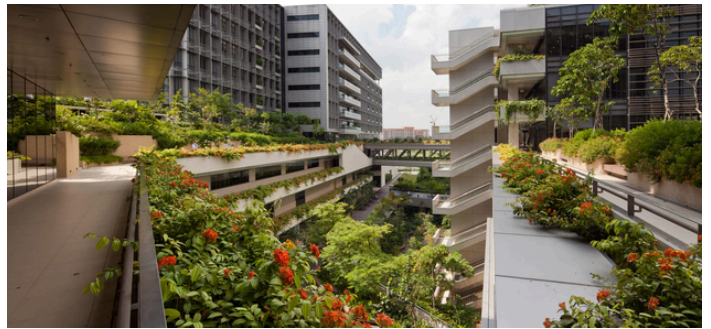


REFLECTIONS ON ASSIGNMENT 1 CASE STUDY

As part of Assignment 1, I did two case studies that demonstrated how passive methods are adapted to their various climates: the Masdar Institute in Abu Dhabi and the Khoo Teck Puat Hospital (KTPH) in Singapore.



Masdar Institute, Abu Dhabi



Khoo Teck Puat Hospital (KTPH) ,Singapore.

Key Personal Takeaways

- Passive strategies must be climate-specific, but the core principles remain adaptable.
- KTPH taught me the value of integrating nature and promoting healing through design.
- Masdar showed how smart form, orientation, and shading reduce energy needs in extreme climates.
- Both reinforced that passive design enhances both environmental performance and user well-being.



Based on the above case studies, I learned how something as simple as orienting a building to catch the breeze or using plants to cool façades can drastically improve the user experience. When I visited Tamarind Square, I recognized many of these same strategies applied in a different building typology. For example, both the buildings and Tamarind Square:

- Use courtyards for air circulation
- Apply natural ventilation in common spaces
- Use landscape as a passive cooling tool
- Embrace climate-specific materials like concrete and local greenery

This connection between research and real-world experience has helped me develop a deeper appreciation for passive design. I now feel more confident in applying similar strategies in my final project, especially in planning for ventilation, orientation, and integrating nature into architectural form.

CONCLUSION

Reflecting on both the green building visit to Tamarind Square and the case studies from Assignment 1 has strengthened my understanding of how passive design strategies can be thoughtfully applied to real-world projects. Each example demonstrated that sustainability is not just about reducing environmental impact, it's about enhancing the quality of life, spatial comfort, and user connection to nature.

From Khoo Teck Puat Hospital, I learned the importance of biophilic design, natural ventilation, and green integration, especially in promoting well-being in tropical climates. The Masdar Institute showed how passive design can also be highly technical, using shading, orientation, and thermal insulation to combat harsh desert conditions.

Seeing these strategies translated locally at Tamarind Square made the lessons feel more grounded. The building's figure-8 layout, open courtyards, passive shading, and use of raw materials all worked in harmony with Malaysia's hot, humid climate, proving that passive strategies are not one-size-fits-all, but adaptable and contextual.

How These Reflections Will Inform My Design Process :

Moving forward, I will approach my design process with a stronger emphasis on:

- Designing with the climate, not against it
- Making site planning, orientation, and ventilation part of the concept stage, not as afterthoughts.
- Using landscaping and materiality as active components of passive design.
- Prioritizing natural light, airflow, and user experience in every decision

This reflection has shifted my mindset from thinking of green strategies as technical requirements to understanding them as tools to create more thoughtful, responsible, and people centered architecture.



REFERENCES

- Tujuan Gemilang. (n.d.). Tamarind Square Project Overview. Retrieved from <https://www.tujuangemilang.com/>
- EcoDesign Architects. (n.d.). Portfolio: Tamarind Square. Retrieved from <https://www.ecodesignarchitects.com/>
- PAM Malaysia. (2019). PAM Awards: Winners Archive. Retrieved from <https://www.pam.org.my/>
- Yeang, K. (1999). The Green Skyscraper: The Basis for Designing Sustainable Intensive Buildings. Prestel.
- CIDB Malaysia. (2025, April 24). Malaysia's next leap in making passive and energy-positive design mainstream. CIDB. Retrieved July 14, 2025, from <https://www.cidb.gov.my/eng/malaysias-next-leap-in-making-passive-and-energy-positive-design-mainstream-2/>
- UiTM Institutional Repository. (2024, January 24). Harmony in spaces: Blending heritage, nature and design [Technical Report]. Universiti Teknologi MARA. Retrieved July 15, 2025, from <https://ir.uitm.edu.my/id/eprint/110519/1/110519.pdf>