

TRANSITIONING FROM TRADITIONAL TO DIGITAL METHODS: INSIGHTS ON DOCUMENTING AND EXHIBITING LANDSCAPE HERITAGE

Received: 18th April 2024 | Accepted: 10th June 2024 | Available Online: 30th June 2024

DOI: 10.31436/japcm.v14i1.877

Khalilah Zakariya^{1*}, Norhanis Diyana Nizarudin¹, Haza Hanurhaza Md Jani¹, Putri Haryati Ibrahim¹, Jasasikin Ab Sani¹, Nor Zalina Harun²

^{1*} *Department of Landscape Architecture, Kulliyah of Architecture and Environmental Design, International Islamic University Malaysia*

² *Institute of the Malay World and Civilization (ATMA), Universiti Kebangsaan Malaysia, Selangor, Malaysia*

Corresponding author: **Khalilah Zakariya
Corresponding author's email: khalilah@iium.edu.my*

ABSTRACT

Documenting heritage is crucial for understanding the history and significance of a society and its surroundings. This process involves capturing a culture's tangible and intangible values through various mediums, such as written records, drawings, maps, photographs, videos, audio recordings, artefacts, and other forms of documentation. With the increasing use of technology, the methods of documenting and presenting heritage have evolved. This research explores the transition from traditional to digital methods in landscape heritage documentation and exhibition. The objectives are to review the instruments and techniques employed and then compare the documentation and exhibits across the studies. The investigation draws upon seven landscape heritage projects in Malaysia and Indonesia within the landscape architecture undergraduate program at International Islamic University Malaysia (IIUM). Each project's documentation and exhibition strategies are classified based on the tools, procedures, and outcomes. The different forms of documentation are subsequently evaluated in terms of their effectiveness and efficiency in recording and showcasing the results of the projects. The study reveals that combining traditional and digital methods offers numerous benefits for heritage documentation. Analysing these projects shows that reflecting, evaluating, exploring, adapting, and refining the documentation process are essential for successful heritage preservation efforts.

Keywords: Culture; digital; documentation; edutourism; heritage

1.0 INTRODUCTION

Heritage studies heavily rely on documentation for safeguarding, preserving, and understanding cultural and natural heritage. The evolution of heritage documentation has progressed from traditional methods to the incorporation of digital technologies (Nakip et al., 2022; Doğan & Yakar, 2018). The information gathered, including artefacts, drawings, and other documentation forms, undergo inventory, analysis, storage, and presentation within this process. Conversely, exhibitions function as platforms for disseminating heritage discoveries to the public. Institutions like museums and galleries document and exhibit their collections to educate the public about the cultural and natural significance of specific places, elements, or traditions. Tourists often seek out heritage sites due to their unique attributes that hold importance for the respective locations. Exhibitions act as extensions of these sites, conveying information through diverse forms of documentation and displays. This study aims to explore the various strategies of documentation and exhibition, tracing the shift from traditional to digital methods by examining a landscape heritage and cultural studies programme conducted over the past decade.

Understanding heritage is essential for students as it enhances their comprehension of the diverse cultural and natural heritage. Exploring cultural heritage allows students to appreciate various cultures' historical, social, and environmental richness. Cultural heritage shapes societies and individuals (Knežević, 2017). By delving into their heritage, students can advance in personal growth and confidence, fostering a sense of pride and connection to their cultural roots (Fernández et al., 2021). Moreover, heritage studies can cultivate intercultural empathy and understanding by exposing students to diverse perspectives and ways of life (Pinto & Ibáñez-Etxeberria, 2018). Engaging with heritage gives students a broader global outlook, a profound insight into cultural diversity, the historical development of settlements and cities, and the skills necessary to navigate an increasingly interconnected world.

2.0 LITERATURE REVIEW

2.1 Landscape Heritage

Landscape heritage encompasses a place's natural and cultural features with historical, aesthetic, cultural, and ecological importance. The heritage attributes include the landscape's natural elements like terrain, flora, fauna, water bodies, and the human-made structures and cultural traditions that have influenced them over time (Gullino et al., 2015). However, the ever-changing nature of landscapes, influenced by natural forces, human interventions, and environmental shifts, poses challenges for their preservation and protection. Sani et al. (2020) asserted that the natural environment generates a positive point of view on life and makes people feel more active and alive. Therefore, documenting heritage becomes crucial in capturing the evolving landscape dynamics (Yang et al., 2019). The subjective nature of how landscapes are perceived adds another layer of complexity, as different individuals and communities may have diverse interpretations and values regarding a particular environment (Lopez-Martinez, 2017). Hence, it is essential for documentation efforts to incorporate local perspectives to ensure a more balanced and authentic portrayal of the landscape, avoiding biases that may arise from an external viewpoint. Given heritage documentation's intricate and dynamic nature, interdisciplinary collaborations are imperative, as heritage encompasses social, cultural, environmental, and physical dimensions (Fairclough & Herring, 2016).

2.2 Heritage Documentation

Heritage documentation serves as a method to safeguard and conserve a landscape's cultural and natural attributes. By documenting these characteristics, the intrinsic value and significance of the landscape can be captured to support conservation endeavours, inform land-use planning decisions, and nominate specific sites for national and international recognition (Whitlock et al., 2017). The outcomes derived from this documentation can also be exhibited and disseminated to enhance public awareness and appreciation of cultural and natural diversity. Through this process, individuals can gain insights into the diverse customs, traditions, belief systems, and geographical elements that have influenced the landscape and its surrounding ecosystem (Feng et al., 2021). The observations and knowledge acquired from these records can expose students to the intricate connections between culture, the environment, and society, fostering a deeper appreciation for preserving landscape heritage (Fernández et al., 2021; Knežević, 2017). The cross-cultural comprehension attained through heritage exploration and studies can serve as a platform for students to refine their critical thinking, analytical abilities, and comprehension of the intricate and evolving processes within landscapes (Butler, 2016).

The initial phase of heritage documentation involves the development of tools and instruments for data collection. The choice of instruments and tools is contingent upon factors such as the characteristics of the heritage sites, the documentation objectives, and the desired outcomes. Researchers and students can utilise traditional analogue methods, modern digital techniques, or a blend of both approaches. Traditional methods of heritage documentation in architecture and landscape architecture have historically relied on manual surveying, hand-drawn sketches, and written descriptions to record and preserve historic buildings and sites. These conventional techniques involve meticulous measurements, detailed drawings, and written notes to document architectural features, cultural landscapes, construction materials, and historical attributes (Menshawy et al., 2022). These methods may include interviews, surveys, artefact measurements, site mapping, modelling, and manual drawings based on direct observations. Through interviews, researchers can extract oral accounts from residents, stakeholders, and custodians of heritage sites to document intangible narratives or information that may need to be more visible on-site. Oral histories and cultural traditions provide valuable insights into the site's significance to the local community and the broader population (Pragnell et al., 2010).

Moreover, traditional documentation methods often require significant time and may need to pay more attention to critical details, leading to potential inaccuracies and omissions in the recorded information (Baik & Boehm, 2015). Despite their limitations, these traditional approaches have laid the groundwork for architectural conservation and heritage preservation efforts. By conducting surveys, recording essential parameters, and visually communicating with conservation teams, traditional methods have formed the basis for understanding and safeguarding architectural heritage (Okpalanozie & Adetunji, 2021).

Conversely, digital methods encompass remote sensing technologies, geographic information systems (GIS), and three-dimensional modelling (Doğan & Yakar, 2018). Digital methods of heritage documentation in the built environment have advanced the field by integrating technologies such as photogrammetry, 3D scanning, and Building Information Modeling (BIM) (Remondino, 2011; Llamas et al., 2017). Using digital tools becomes essential in creating 3D models that capture intricate details of buildings, ornamentation and the sites (Menshawy et al., 2022; Zhang et al., 2022). Digital technologies also enable the visualisation and representation of heritage sites, which can aid the preservation of heritage sites at risk of deterioration through documentation, either for further analysis or as a detailed record of the assets (Günay, 2022). Using simpler digital tools such as photography, video recording, and drones and creating a website can also provide accessible and effective means to document architectural and landscape heritage. These tools allow for the capture of visual and aerial perspectives, aiding in the creation of immersive and informative digital content that can be widely shared to enhance the understanding and appreciation of cultural heritage sites (Chatzigrigoriou et al., 2021; Remondino et al., 2011). Digital methods offer the advantage of efficiently collecting and processing vast amounts of data that can be analysed differently. The utilisation of digital data enables more sophisticated analyses and simulations, thereby expanding the potential for comprehensive heritage documentation.

2.2 Heritage Exhibition

Exhibitions serve as a social approach for presenting information and discoveries related to

the heritage of a particular location to people. Museums and galleries utilise diverse formats in their display to provide visitors with an engaging experience, aiming to enhance their awareness and appreciation towards cultural and heritage values (Poria et al., 2010). Both tangible and intangible aspects of heritage are carefully curated into a coherent narrative, offering visitors an interactive and visually stimulating experience with the heritage. Exhibitions represent physical spaces where the public can delve into a site's historical, cultural, and environmental assets, fostering a sense of pride within the local community (Santoro et al., 2020). In tourism, temporary, seasonal, or permanent exhibitions can contribute to the local economy by drawing tourists to the region (Gkoltsiou et al., 2021). Through these storytelling platforms, exhibitions emerge to advocate for the preservation of heritage by promoting knowledge, awareness, and appreciation among the public for heritage values.

3.0 METHODOLOGY

This study is based on a selection of seven landscape heritage and cultural studies projects carried out in Malaysia and Indonesia as part of the Bachelor of Landscape Architecture (Hons.) programme at IIUM (see Table 1 for details). The primary objective of these projects is to familiarise students with the process of investigating and documenting heritage information, followed by raising public awareness about the heritage values of the specific study area through the organisation of an exhibition. Each year, the project involves a varying number of students, typically ranging from 20 to 50 participants based on the intake, with the project site being either local or international. The project spans eight weeks during the short semester and is conducted through collaborative group work. By engaging in project-based learning, students are tasked with showcasing their understanding of the local culture and history of the landscape heritage in the study area by creating multiple outputs, including presentations, reports/publications, physical or digital models, exhibitions, and other relevant media.

Table 1: Selected landscape heritage and cultural studies project sites

Project Site	Year
Bali, Indonesia	2013
Bandung, Indonesia	2014
Kota Bharu, Kelantan	2015
Palembang, Indonesia	2017
Johor Bahru, Malaysia	2018
George Town, Penang, Malaysia	2019
Taiping, Perak, Malaysia	2022

In this study, the focus is on reviewing and analysing these projects according to three key aspects: i) instruments that were used during the site visits and documentation phase, ii) the process of teaching and learning, and iii) the output approach for the exhibition. By categorising and evaluating these criteria, the study analyses the transformations in teaching and learning methodologies within the course throughout the previous decade.

4.0 RESULTS

4.1 Instruments and Tools

Various tools and equipment were utilised during the fieldwork and documentation phase (see Figure 1). All the projects implemented the on-site data collection technique for their visits, a common practice in studies related to the built environment. The tools employed encompass mapping, site inventory, observation checklist, interviews, surveys, digital photography, videography, moulding, and tracing. Mapping activities were carried out on physical base maps prepared before the visit, highlighting existing heritage sites, significant landmarks, study areas, and other essential information gathered during the desktop study (see Figure 2). The observation was structured according to the checklist to aid the mapping process and record how individuals engage with the heritage sites through their movements, activities, and other observable behaviours contributing to the insights and discoveries. These observations were documented on the maps using traditional methods like pen and paper and through measured drawings, sketches, digital photographs, and videos captured during the site visit. Critique sessions were conducted nightly to review and discuss the findings (Figure 3).

PROJECT SITE	YEAR	INSTRUMENTS								TOOLS							
		Mapping	Observation Checklist	Interview	Survey	Photography	Videography	Moulding	Tracing	Measured Drawing	Maps	Sketches	Camera and Video	Voice Recorder	Charcoal Tracing	Plaster Modelling	Drone
Bali	2013	*	*	*		*	*	*	*	*	*	*	*	*	*	*	
Bandung	2014	*	*	*		*	*	*	*	*	*	*	*	*	*	*	
Kota Bharu	2015	*	*	*		*	*	*	*	*	*	*	*	*	*	*	
Palembang	2017	*	*	*		*	*	*	*	*	*	*	*	*	*	*	
Johor Bahru	2018	*	*	*		*	*	*	*	*	*	*	*	*	*	*	
Georgetown	2019	*	*	*		*	*	*	*	*	*	*	*	*	*	*	
Taiping	2022	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Fig 1: Instruments and tools used during site visit and documentation phase



Fig. 2: Mapping and inventory conducted for the Johor Bahru project



Fig. 3: Measured drawings and sketches for the Palembang project

The manual drawing tools used were portable and did not rely on batteries, making them durable for swift observations and annotations throughout the day at any location. Nonetheless, manual tools' downside was their constraints in confined spaces when using large base maps and in adverse weather conditions when exposed to sudden outdoor rainfall. Sketchbooks have emerged as the most dependable portable tool for recording observations and creating rapid maps that can later be transposed onto base maps at a more convenient time. Digital viewing of photos and videos was conducted using laptops, with printing reserved for the post-site visit analysis and documentation intended for exhibitions. In the latest project, Taiping, students used a more advanced drone tool to document the heritage site (see Figure 4). The drone facilitated capturing aerial perspectives of the site on a larger scale and with greater precision than Google Earth, offering the potential for generating alternative mapping formats if necessary.



Fig. 4: Drone usage for aerial photos and videos for the Taiping project

Interviews were conducted with local authorities, site custodians, residents, and visitors to understand better their perceptions, challenges, and strategies concerning the heritage sites. The project team organised a briefing session led by the local municipality to gather additional information about the site, existing documentation, and conservation plans and posed inquiries about heritage preservation. Video recordings and photographs were used to document the interview sessions. The students transitioned from utilising dedicated voice recorders to their smartphones for recording interviews, given the widespread use of

smartphones as a primary communication tool equipped with voice recording capabilities. Surveys served as an additional tool to evaluate public perceptions and experiences regarding the site, with the survey method being introduced during the 2022 Taiping project. In this project, students devised survey boards featuring concise and targeted questions, applying coloured stickers to differentiate responses from various age groups as an engaging strategy to encourage public participation.

To document samples of the intricate heritage elements, such as patterns and motifs, the students employed moulding and tracing techniques to recreate a life-sized version of the component (see Figure 5). The moulding process involved clay and plaster, with most of the work done on location. However, a limitation of this method was the time needed for the clay to dry and the delicate nature of storing, packing, and transporting the plaster moulds back to the studio without damage, particularly when travelling to international locations. As a result, students have chosen only to create clay moulds on-site and produce plaster moulds upon their return. The patterns and motifs were also documented through measurements, sketches, and photographs, which were later digitised to generate technical drawings. Tracing on paper with charcoal was another tool to document the intricate heritage elements. However, this method was only used in the Bali project. It was not continued for other projects because the moulding and drawings output was sufficient to capture the essence of the elements.



Fig. 5: Clay and plaster modelling and tracing for the Bali project

4.2 Process of Teaching and Learning

The process of teaching and learning for landscape heritage and cultural studies can be delineated into three primary stages: i) pre-site visit, ii) site visit, and iii) post-site visit (refer to Figure 6). In the initial phase, students engaged in desktop study to explore secondary sources of information about the site. This desktop study enabled students to research the historical background and heritage significance of the site, review previous studies conducted, identify key features and attributes for analysis, identify locations of historic areas and points of attractions and understand the broader context of the site. Subsequently, based on the desktop study findings, students formulated data collection strategies during the site visit. Moreover, course lecturers provided lectures and occasionally guest speakers to enrich the student's knowledge about the landscape heritage. In the case of the Taiping project, students have organised a series of webinars featuring subject matter experts to share knowledge about heritage with the university community and the public.

Throughout the site visits, students engaged in first-hand experiences, observations, and documentation of heritage sites based on a checklist, attributes, and study scope that had been prepared. The investigation of these sites was centred around four fundamental dimensions: the physical environment, natural environment, beliefs, and practices. Central to these aspects are the people and their historical interactions that have influenced and shaped the environment over time. Students could directly see the site, engage with the local communities, and gather information about the site's heritage values. During the COVID-19 pandemic, the landscape heritage and cultural studies project had to transition into a virtual format due to domestic and international travel restrictions. The shift to virtual site visits facilitated an international collaboration between Malaysia and Tunisia. It allowed students to collaborate with peers from different countries, exchange insights on heritage sites within their regions, and develop remote and online work skills. Nonetheless, a drawback of remote learning in heritage studies was the need for on-site experiences that could only be attained through physical visits to heritage sites.

PROJECT SITE	YEAR	PRE-SITE VISIT	Desktop Study	Input Lectures	Preparing Instrument	Webinars	SITE VISIT	Data Collection	On-Site Discussions	POST-SITE VISIT	Progress Presentations	Book Preparation	Video Documentary	Drawings	Exhibition Materials	Webinars
Bali	2013		*	*	*			*	*		*	*	*	*	*	
Bandung	2014		*	*	*			*	*		*	*	*	*	*	
Kota Bharu	2015		*	*	*			*	*		*	*	*	*	*	
Palembang	2017		*	*	*			*	*		*	*	*	*	*	
Johor Bahru	2018		*	*	*			*	*		*	*	*	*	*	
Georgetown	2019		*	*	*			*	*		*	*	*	*	*	
Taiping	2022		*	*	*	*		*	*		*	*	*	*	*	*

Fig. 6: Process of teaching and learning

Another critical process during the site visit was the on-site discussions, where students presented their discoveries and initial analyses. These discussions were vital in enabling students to reflect and interpret their data while actively engaging at the site and strategising for the next day's data collection activities. On-site discussions, depicted in Figure 7, have proven to be indispensable across all projects, as they served as the starting point for fostering critical thinking, analysis, and synthesis during the site visit. Utilising maps, sketches, photographs, and information gathered from interviews and surveys, students collaborated to examine and deliberate on various aspects of the heritage sites, including their status, potential, and challenges. These attributes were documented and analysed, encompassing the site's historical background, natural characteristics, public and green spaces, urban layout, architectural designs, notable landmarks, people, and culture, as well as scenic vistas and sensory experiences, among others, which may vary depending on the site's distinctiveness. While most of the fieldwork process and flows were prearranged before the visit, the projects maintained a flexible and adaptable approach that allowed refinement and adjustments.

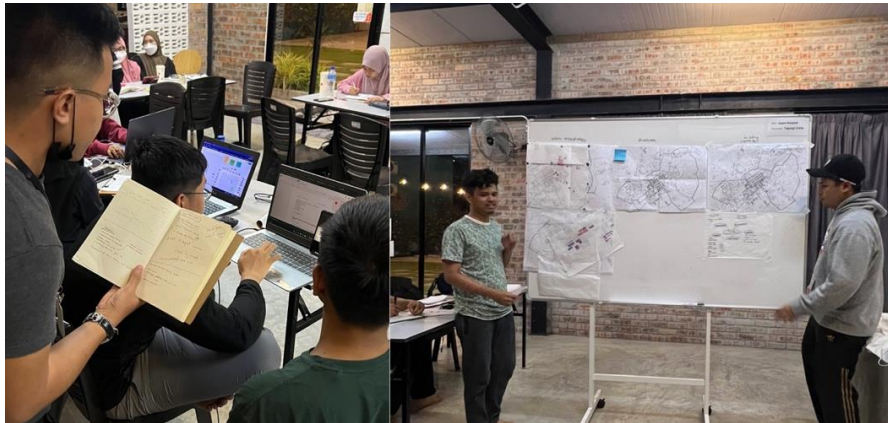


Fig. 7: On-site discussions and presentations for the Taiping project

In the phase following the site visit, students would digitally transfer their collected data to prepare for the final documentation and exhibition. The exhibition deliverables included a range of outputs, such as books, video documentaries, various types of drawings (such as technical drawings, sketches, and digital 3D renderings), and exhibition materials like posters, models, moulding displays, drawing exhibits, and infographic displays. Students were assigned to work in groups according to specific tasks, with each group conducting analyses of the heritage sites according to their designated topics. Regular presentations were conducted every week to evaluate the progress of the work. In previous projects spanning from 2013 to 2019, progress presentations were predominantly carried out digitally utilising software such as Microsoft PowerPoint, Microsoft Publisher, AutoCAD, SketchUp, Adobe Photoshop and Adobe Illustrator, supported by manual drawings, physical models, and handcrafted exhibition items (see Figure 8). In the post-pandemic era, university students and educators have been introduced to collaborative and innovative platforms like Canva, Miro and Google Shared Documents. These applications have been integrated into the Taiping project, offering advantages for group collaboration by enabling each member to contribute to their respective sections while working on a shared document in real-time.

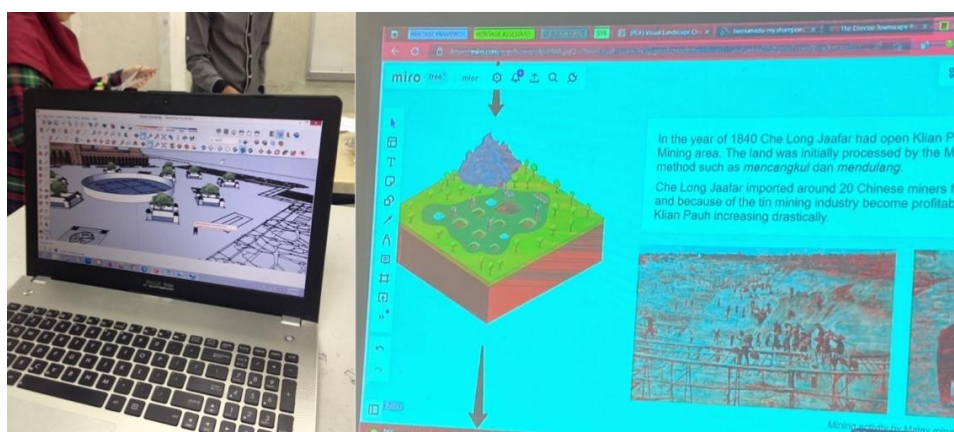


Fig. 8: Progress work for the Bandung project (left) and the Taiping project (right)

The teaching and learning phase was the most critical, offering the opportunity to introduce new approaches to students. Transitioning from analogue to digital posed several challenges during this phase, necessitating careful consideration of appropriate approaches while

considering time constraints, budget limitations, and the technological proficiency of lecturers and students. Different lecturers teach the course each semester, so instructional methods may vary while still achieving consistent learning outcomes. The technological competencies of lecturers would also differ based on their expertise, preferences, familiarity with various tools and platforms, and the student's willingness to explore diverse techniques and technologies available at the time. Nevertheless, these challenges did not impede the development of the teaching and learning process, as the course's nature encourages students to employ creativity in any form, whether through analogue or digital means.

4.3 Exhibition Output

The exhibition is the pinnacle of the landscape heritage and cultural studies course. Outputs from the documentation process were showcased in physical and digital formats (see Figure 9). The most consistent forms of physical displays included books, models, posters, mouldings, sketches, and infographic presentations. These tangible deliverables were also displayed in digital forms during the exhibition. The books were composed based on the research findings of the heritage sites, featuring descriptive narratives, photographs, illustrations, and graphical representations. Technical drawings were compiled into categories: streets, squares, furniture, gardens, parks, and other elements.

Conversely, models highlighted vital areas within the heritage sites. Infographic posters were designed to present historical descriptions, timelines, and detailed descriptions of various facets of landscape heritage, complemented by sketches and images. Figure 10 illustrates the diverse array of exhibition displays showcased in the projects.

The benefits of utilising physical exhibition materials could be seen in their tangible nature, allowing for detailed observation within the exhibition setting. These physical resources can be customised, organised and exhibited according to the student's creativity. Visitors could interact with diverse presentation forms and techniques that vary from one exhibition to another. However, due to their sizes and materials, physical display materials have disadvantages regarding post-exhibition storage. Mainly for this course, where the exhibition is held for only one week and only once, the durability of the physical materials becomes a critical concern, especially when storing fragile or perishable items post-exhibition.

PROJECT SITE	YEAR	PHYSICAL	Book	Drawings	Models	Posters	Mouldings	Tracings	Sketches	Infographic Displays	DIGITAL	Book	Drawings	Mapping	Models	Video Documentary	Website	Hologram	Virtual Reality	Augmented Reality
Bali	2013		*	*	*	*	*	*	*	*			*	*	*	*				
Bandung	2014		*	*	*	*	*		*	*			*	*	*	*				
Kota Bharu	2015		*	*	*	*	*		*	*			*	*	*	*				
Palembang	2017		*	*	*	*	*		*	*			*	*	*	*				
Johor Bahru	2018		*	*	*	*	*		*	*			*	*	*	*				
Georgetown	2019		*	*	*	*	*		*	*		*	*	*	*	*	*	*		
Taiping	2022		*	*	*	*			*	*		*	*	*	*	*	*	*	*	*

Fig. 9: Forms of exhibition output

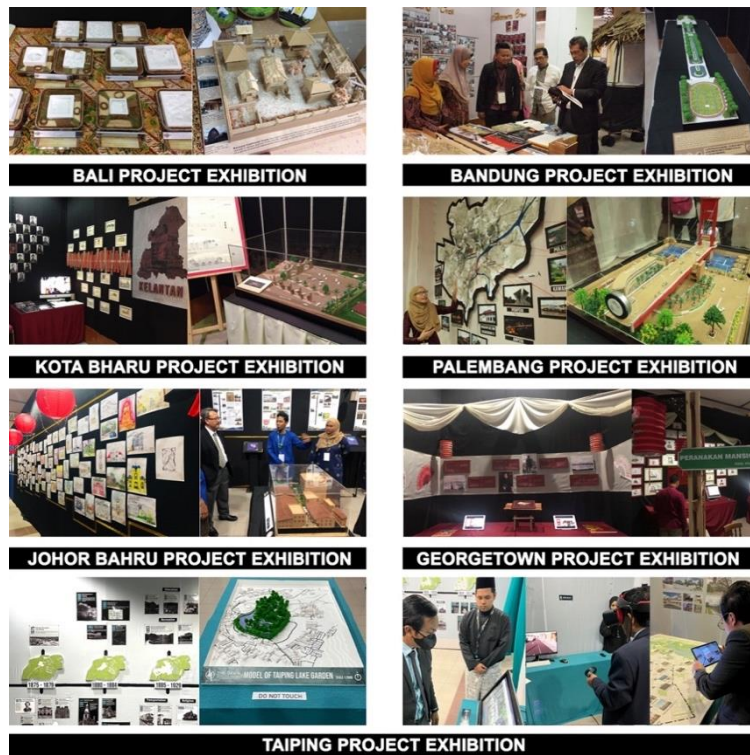


Fig. 10: Project exhibitions

Between 2013 and 2018, the documentation and materials were exclusively exhibited and accessible for physical viewing only during the exhibition week. In 2019, the Georgetown project team established a website (<https://bhinekastudio.wixsite.com/georgetown>) to archive and disseminate their findings online. The development of the heritage website marked a pivotal milestone in the project, showcasing the potential of utilising online platforms to share the project's outcomes to a broader audience and establish a digital repository for future reference. Additionally, the Georgetown project introduced an interactive digital presentation enabling visitors to interact with the maps, clicking on specific locations to explore details about various sites (see Figure 11). Furthermore, the project incorporated holographic technology to showcase two of their models.



Fig. 11: The Georgetown project website

In 2022, the Taiping project continued the digitalisation efforts by creating a website (<https://taiping-heritage-exploration.webflow.io/>), as depicted in Figure 12. The website is an online platform for visitors to engage during the exhibition while also serving as a comprehensive heritage portal accessible to individuals worldwide. Through interactive maps, narratives, graphics, video documentaries, and e-books, visitors can explore and learn

about the rich heritage assets of Taiping (Zakariya et al., 2023). The Taiping project team also developed innovative methods to enhance visitors' Taiping experiences, incorporating holographic displays, virtual reality simulations, and augmented reality features. These digital tools have piqued visitors' interest and significantly enriched the educational experience of exploring and appreciating Taiping's heritage.

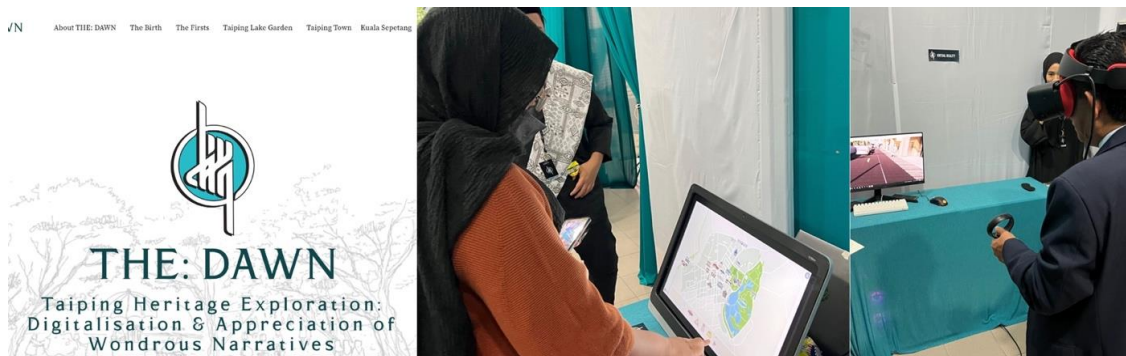


Fig. 12: The Taiping project website

5.0 DISCUSSION AND CONCLUSION

The projects aimed to expose students to the heritage attributes and values of the heritage sites. Using a project-based learning strategy, students conducted pre-visit research on the sites and then gathered on-site data to gain a first-hand understanding. Analysis of the seven projects revealed that both traditional and digital methods have advantages and disadvantages. Digital technology provides a broader scope of data collection and analysis in the contemporary digital era. For instance, drones facilitate the capture of up-to-date, precise, and real-time aerial imagery and mapping. Future projects could incorporate additional data capture techniques like Geographical Information System (GIS), Light Detection and Ranging (LiDAR), and sensors, as highlighted by recent literature that shows the advancement of digital methods in heritage documentation. Most drawings were prepared digitally during the documentation process, providing convenience and efficiency in editing, updates, and collaborative work. Digital content could be easily converted to create digital representations that offer novel experiences to visitors, such as through virtual reality, augmented reality, and mixed realities. Moreover, website digital content extends heritage learning opportunities beyond physical boundaries. Nonetheless, digital exhibitions may involve higher expenses and need more tangible experience provided by digital exhibitions.

Traditional methods were utilised to capture tangible records and material records of heritage. Through the implemented projects, the analogue approaches for data collection, such as utilising clay and plaster for mouldings and tracings, conducting measured drawings, and engaging in interviews with individuals, were integrated into the students' experiential learning process. The physical data gathering stimulated senses and feelings towards the sites that cannot be replicated in a virtual setting. Within the documentation phase, analogue methods like constructing models, developing physical infographic displays, and arranging exhibition spaces fostered critical spatial reasoning and enhanced motor skills among students. During the exhibition, physical exhibits provided a more tactile experience as visitors could visually see and interact with the displays. Various techniques, materials, shapes, sizes, and textures can be employed in designing displays to generate diverse intended experiences. Nevertheless, the limitations of physical exhibits lie in their

susceptibility to wear and tear, challenges in mobility, and the necessity for adequate storage facilities.

Combining traditional and digital methods in documenting and exhibiting landscape heritage yields substantial advantages. Firstly, integrating these methods enhances comprehension of heritage sites that come in tangible and intangible aspects of heritage. Through the documentation process, students can deepen their understanding of the sites and generate more comprehensive learnings to be shared with others via the exhibitions. Secondly, hybrid exhibition displays can engage diverse audiences, catering to individuals of varying age groups. Digital technology enables the creation of immersive and interactive exhibits that appeal to the younger demographics, while physical displays offer a more conventional exhibition format for other visitors. Exhibitions are an integral platform for raising awareness by disseminating knowledge in an informal setting and facilitating experiential learning. By enhancing public awareness regarding the significance of heritage preservation, visitors are instilled with a sense of appreciation as they engage with and learn about the site. Thirdly, integrating diverse tools and technologies encourages interdisciplinary approaches in heritage documentation, fostering novel learning opportunities and facilitating the exchange of knowledge and experiences among students and visitors. Findings from this study alluded to the contributions of integrated methods in landscape heritage documentation that can be further expanded as an effort to research how heritage values can be conserved in the future, particularly in landscape architecture.

Heritage documentation projects require continuous reflection, evaluation, exploration, adaptation, and refinement. Each project can determine what works best and could be improved, areas for enhancements, advantages and disadvantages, and insights for refining future projects. Throughout the course, the methodologies employed have gradually evolved. In conclusion, incorporating traditional and digital methods in landscape heritage documentation and exhibition offers numerous educational benefits in heritage studies and the landscape architecture field. Interactive exhibitions captivate the public, draw visitors to heritage sites, and promote understanding of the diverse techniques for documenting heritage. The utilisation of various approaches in executing these projects underscores the importance of reflection, review, exploration, adaptation and refining in heritage documentation. By integrating the strengths of traditional and digital techniques, landscape heritage researchers can create richer heritage documentation, ensuring its safeguarding and appreciation by future generations.

ACKNOWLEDGMENTS

The authors would like to thank all the lecturers and students involved in the Landscape Heritage and Cultural Studies course from the Department of Landscape Architecture, Kulliyyah of Architecture and Environmental Design, International Islamic University Malaysia.

REFERENCES

- Baik, A. & Boehm, J. (2015). We are building information modelling for a historical building in Jeddah - Saudi Arabia. In: Guidi, G., Torres, J. C., Scopigno, R., Graf, H., Remondino, F., Brunet, P., Barcelo, J., Duranti, L. and Hazan, S. (eds.) (Proceedings) *2015 Digital Heritage*. (pp. pp. 125-128). IEEE: Granada, Spain. <https://doi.org/10.1109/digitalheritage.2015.7419468>

- Butler, A. (2016). Dynamics of integrating landscape values in landscape character assessment: The hidden dominance of the objective outsider. *Landscape Research*, 41(2), 239–252. <https://doi.org/10.1080/01426397.2015.1135315>
- Chatzigrigoriou, P., Nikolakopoulou, V., Vakkas, T., Vosinakis, S., & Koutsabasis, P. (2021). Is architecture connected with intangible cultural heritage? Reflections from architectural digital documentation and interactive application design in three Aegean Islands. *Heritage*, 4(2), 664–689. <https://doi.org/10.3390/heritage4020038>
- Doğan, Y. & Yakar, M. (2018). GIS and three-dimensional modelling for cultural heritages. *International Journal of Engineering and Geosciences*, 3(2), 50–55. <https://doi.org/10.26833/ijeg.378257>
- Fairclough, G. & Herring, P. (2016). Lens, mirror, window: Interactions between historic landscape characterisation and landscape character assessment. *Landscape Research*, 41(2), 186–198. <https://doi.org/10.1080/01426397.2015.1135318>
- Feng, D., Chiou, S., & Wang, R. (2021). On the sustainability of local cultural heritage based on the landscape narrative: A case study of historic site of Qing Yan Yuan, China. *Sustainability*, 13(5), 2831. <https://doi.org/10.3390/su13052831>
- Fernández, J. A. L., Medina, S., López, M. J., & García-Morís, R. (2021). Perceptions of heritage among students of early childhood and primary education. *Sustainability*, 13(19), 10636. <https://doi.org/10.3390/su131910636>
- Gkoltsiou, A., Athanasiadou, E., & Paraskevopoulou, A. T. (2021). Agricultural heritage landscapes of Greece: Three case studies and strategic steps towards their acknowledgement, conservation and management. *Sustainability*, 13(11), 5955. <https://doi.org/10.3390/su13115955>
- Gullino, P., Beccaro, G. L., & Larcher, F. (2015). They are assessing and monitoring the sustainability of rural world heritage sites. *Sustainability*, 7(10), 14186–14210. <https://doi.org/10.3390/su71014186>
- Günay, S. (2022). Virtual reality for lost architectural heritage visualisation utilising limited data. *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, XLVI-2/W1-2022, pp. 253–257. <https://doi.org/10.5194/isprs-archives-xxvi-2-w1-2022-253-2022>
- Knežević, Ž. (2017). Cultural heritage and tourism – an introduction. *Liburna*, 2(1). <https://doi.org/10.15291/lib.992>
- Llamas, J., Lerones, P. M., Medina, R., Zalama, E., & Gómez-García-Bermejo, J. (2017). Classification of architectural heritage images using deep learning techniques. *Applied Sciences*, 7(10), 992. <https://doi.org/10.3390/app7100992>
- Lopez-Martinez, F. J. (2017). Visual landscape preferences in Mediterranean areas and their socio-demographic influences. *Ecological Engineering*, 104, 205–215. <https://doi.org/10.1016/j.ecoleng.2017.04.036>
- Menshaw, A. E., Omar, W., & Adawy, S. E. (2022). Preservation of heritage buildings in Alexandria, Egypt: An application of heritage digitization process phases and new documentation methods. *F1000Research*, 11(1044). <https://doi.org/10.12688/f1000research.123158.1>
- Nakip, G. G., Ballice, G., Özçelik, E. P., & Akçam, İ. D. (2022). Documenting and conserving modern architectural heritage: Çağlayan apartment building İzmir-Karşıyaka. *Architecture, Civil Engineering, Environment*, 15(3), 23–41. <https://doi.org/10.2478/acee-2022-0028>
- Okpalanozie, O. E. & Adetunji, O. S. (2021). Architectural heritage conservation in Nigeria: The need for innovative techniques. *Heritage*, 4(3), 2124–2139. <https://doi.org/10.3390/heritage4030120>
- Pinto, H. & Ibáñez-Etxeberria, A. (2018). Constructing historical thinking and inclusive identities: Analysis of heritage education activities. *History Education Research Journal*, 15(2). <https://doi.org/10.18546/herj.15.2.13>
- Poria, Y., Reichel, A., & Cohen, R. (2010). World Heritage Site—is it an effective brand name? *Journal of Travel Research*, 50(5), 482–495. <https://doi.org/10.1177/0047287510379158>
- Pragnell, J., Ross, A., & Coghill, B. (2010). Power relations and community involvement in landscape-based cultural heritage management practice: An Australian case study. *International Journal of Heritage Studies*, 16(1–2), 140–155. <https://doi.org/10.1080/13527250903441838>
- Remondino, F. (2011). Heritage recording and 3D modelling with photogrammetry and 3D scanning. *Remote Sensing*, 3(6), 1104–1138. <https://doi.org/10.3390/rs3061104>
- Sani, J. A., Sharip, N. A. A., & Ibrahim, P. H. (2020). Soft-scape quality issues in landscape construction industry: Malaysia. *International Journal on Sustainable Tropical Design Research & Practice*, 13(1).
- Santoro, A., Venturi, M., & Agnoletti, M. (2020). Agricultural heritage systems and landscape perception among tourists. The case of Lamole, Chianti (Italy). *Sustainability*, 12(9), 3509. <https://doi.org/10.3390/su12093509>
- Whitlock, C., Colombaroli, D., Conedera, M., & Tinner, W. (2017). Land-use history as a guide for forest

- conservation and management. *Conservation Biology*, 32(1), 84-97.
<https://doi.org/10.1111/cobi.12960>
- Yang, C., Han, F., Shutter, L., & Wu, H. (2019). Capturing spatial patterns of rural landscapes with point cloud. *Geographical Research*, 58(1), 77-93. <https://doi.org/10.1111/1745-5871.12381>
- Zakariya, K., Nizarudin, N. D., Md Jani, H. H., & Ibrahim, P. H. (2023). Potentials of the interactive website in improving visitors' awareness on landscape heritage. *Asian People Journal (APJ)*, 6(2), 136-154.
<https://doi.org/10.37231/apj.2023.6.2.561>
- Zhang, X., Zhang, A., Xu, J., & Ma, R. (2022). Documentation and inheritance of ancient opera stage based on multidisciplinary approach and digital technology. *Buildings*, 12(7), 977.