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THE ELECTRONIC GREEN INITIATIVES DATABASE ON CAMPUS (eGREENi) THROUGH SPATIAL TECHNOLOGY APPLICATIONS

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ABSTRACT

Prior to achieving sustainable campus recognition and strategizing green initiatives, a comprehensive and accessible green initiatives campus database is subsequently necessary. The relevant activities, programs and implementation of the green agenda need to be coordinated and documented. Therefore, in line with the university and sustainable development goal (SDG) desire in pursuing sustainable cities and communities, the green campus documentation needs to be digitalized. The Electronic Green Initiatives Database on Campus (e-GREENi) was created using a combination of Geographical Information System (GIS), and the use of Survey123 Mobile Apps technologies. This database focuses on the development of GIS and a web-based system to assist administrators in managing Green Initiative records more effectively. This database collection was also conducted to coordinate and map the location of Green Initiatives on campus. This system is well equipped with a search function that can provide information about the initiatives by using an Internet browser. In addition, the use of a quick response in e-GREENi database allows various types of information to be directly accessible and easily generated with fast-reading accuracy. Consequently, e-GREENi application would also be a profound basis for the new Green Innovation application besides coordinating several Green Initiatives case studies namely The Green Roof, Solar Charging Hub, 3R initiatives, fertigation, Musang King Valley, and Kelulut Farm around UiTM Perak Branch, Seri Iskandar Campus.

Keywords: Green Initiatives, Spatial Technology, Mobile Apps, Campus, GIS.

1. INTRODUCTION

Green campus initiatives have become essential components of current university systems as a response to human activities on the environment. Therefore, the initiatives in green activity on campuses are recognized as the most promising and demandable efforts which are aligned with the SDG establishment and the Global Green Agenda (Junior et. al 2020; Richardson & Lynes, 2007; Yanthi et. al, 2019;). Having a green campus will technically mean it represents a place where environmental, economic, and social aspects are taken into consideration to achieve sound ecological sound, social, cultural, and economically viable place (Safarkhani & Örnek, 2022; Yanthi et. al, 2019). A successful green campus provides leadership by example for the society (Amaral et al., 2015), as it is a way to disseminate information about sustainability. Therefore, without a manageable green database and initiatives on campus, the operational model, planning design, business practices, academic programs, and people are hardly connected to provide educational and practical values to the institution, region, and the world.

Thus, as UiTM Perak campus has actively initiated various efforts and programs in keeping the environment green, a comprehensive database towards effective management is significantly important. The concern is to continuously practise the green lifestyle, educate the young generations, manage risk and subsequently support a sustainable future. This innovation aims to digitise the green initiatives database through electronic devices that would easily be accessed, providing accurate and quick information, synchronizing updated data towards centralising the green initiatives database in UiTM Perak Campus through adopting the spatial technology applications.

2. METHODOLOGY

2.1 Spatial Technology Application

Spatial technology applications can be developed through digital mapping of green initiatives in campus locations which forms a more informative GIS-based and systematic information (Alshuwaikhat et al., 2017). The development of this database is more specific referring to the spatial data and the relationship in developing a GIS system of the several green initiatives in campus namely the Solar Charging Hub, The Green Roof, The Musang King Valley, Kelulut Farm, Smart Lab, and many more. Furthermore, holistic Green Initiatives with a better design and organized approach for the campus community and UiTM system were established. Figure 1 shows the methodology process using Survey 123 application to customize the form according to the related information.

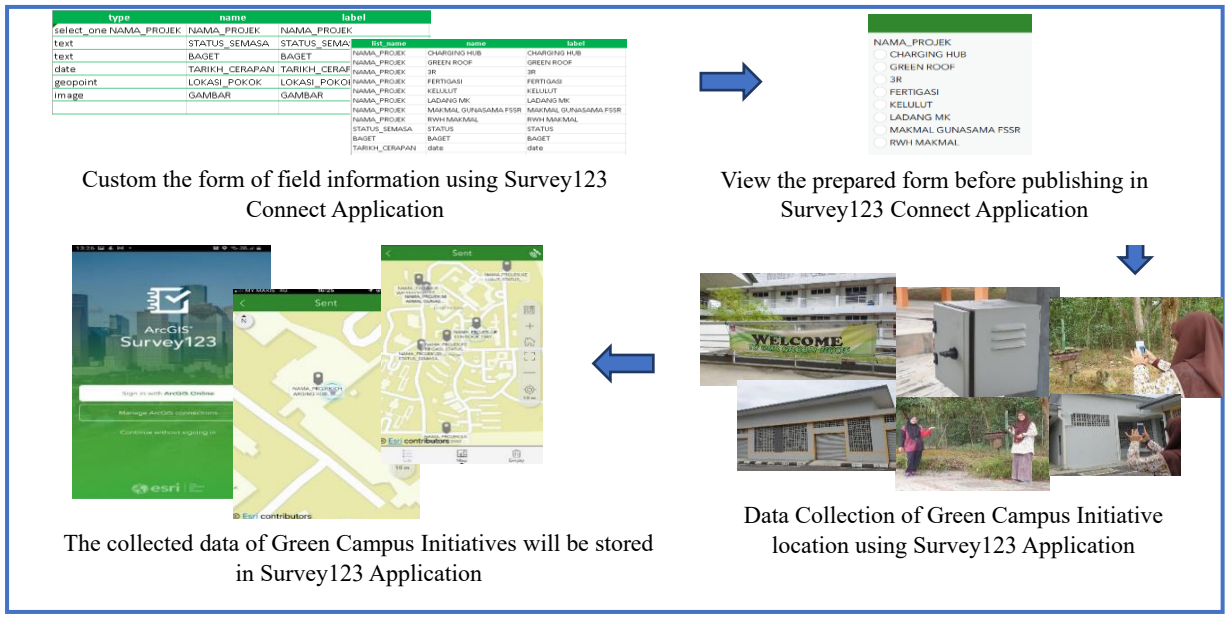

Figure 1 eGREENi Methodology and Database Platform

This management system adopted ArcGIS software, which includes various analysis and information updates can also be made. The use of the GIS system allows the Green Campus

community to act as an administrator, in order to update the provided database. Therefore, the system is constantly reliable and consequently manageable.

3. FINDINGS

3.1 Electronic Green Initiatives Development

The development of GIS database and Green campus initiatives are beneficial to the campus community in particular to adapt with green action, local and international green inventors to strategize and replicate the initiatives and UiTM system in recognizing the ability to go green in campus for the near future (Adams, 2022). This system is sufficient, and accessible, as it provides a convenient and reliable system to everyone, especially to the campus users and visitors in the campus.

3.2 The eGREENi Interface

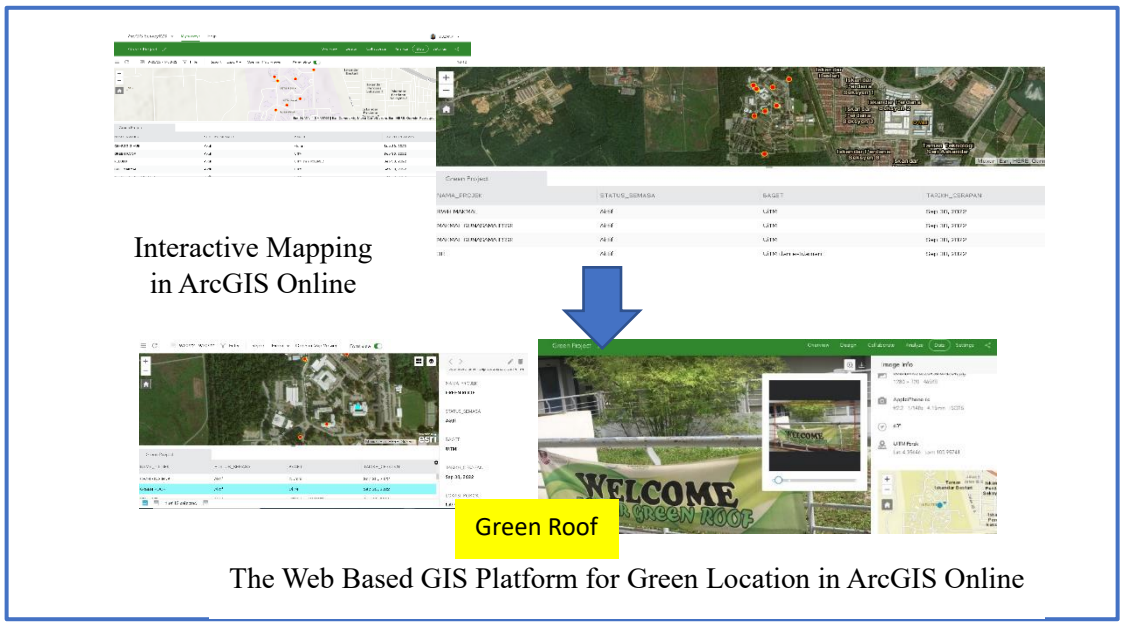

Figure 2 eGREENi Component and Benefits of the Projects Novelty

4. CONCLUSION

This ArcGIS Pro software is a platform for providing a database and mapping of green initiatives on campus. This software is capable of handling database management in an integrated manner. Apart from that, ArcGIS Online is also a software that is potentially competent in developing interactive, quick, easy and user-friendly web-based systems. In conclusion, the objective and implementation of eGREENi on campus is very important to: (i) digitize the physical initiatives of green effort in campus (ii) initiate and establish more of the green activity value, provide significant impact to society and environment, educate through campuses benchmarking and create an eco-cost potential; (iii) align and practise the SDG and

Global Green Agenda; (iv) present information assistance and virtual attraction for both local and international platforms; and consequently contributes an accessible data and virtual experience to the local authority and community towards the sustainable future.

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Kelulusan daripada pihak tuan dalam perkara ini amat dihargai.

Sekian, terima kasih.

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