

**UNIVERSITI TEKNOLOGI MARA
PERAK BRANCH**

**ELECTROCHROMIC SOLAR SMART
WINDOW**

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Innovation project report submitted in partial fulfilment
of the requirements for the degree of
Bachelor of Science (Hons.) Construction Technology

Faculty of Architecture, Planning & Surveying

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AUTHOR'S DECLARATION

I in the name of JULIA SHAZLIN BINTI BURHAN, declaring that the work that being completed in this innovation project report was carried out in accordance with the regulation of Universiti Teknologi MARA. This innovation project is the original and the results of my own work, unless otherwise indicated or acknowledge as referenced work. I can ensure that this topic has not been submitted to any other academic institution or non- academic institution for any degree or qualification.

In case or in the event that my innovation report be found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree and agree be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

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ABSTRACT

Malaysia is recognised as a tropical region with natural benefits such as solar radiation and natural daylight, which may brighten building interiors throughout the year. The opening system is a building method that enables direct sunlight to reach the structure from the outside. As a result, window openings should be carefully selected based on the design factors and installation location. A number of flaws and drawbacks have been observed as a result of the incorrect window selection for the campus, including a lack of safety, invasion of privacy, unstable heat and glare, and a high cost from the current window. The goal of this study report is to improve the quality of the campus's building envelope by designing a new window design. This innovation idea concept includes a few objectives, including identifying the flaws of current windows on campus, proposing an improved window, and determining the marketability potential for the suggested window on campus. To meet the research study's objectives, the approach for development will be based on a literature evaluation and simulation using Sketch Up, Key Animation, and Cap Cut. The findings reveal that the innovative idea provides a more efficient means of opening the structure while also promoting safer operation, privacy, balancing natural light, and cost savings over current windows. As a result, this innovative design is expected to have a favourable influence and marketability as one of the construction parts that is a window in Malaysia.

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