UNIVERSITI TEKNOLOGI MARA

PERAK BRANCH

HEATING LIGHT FOR INFRARED THERMOGRAPHY (IRT) DEFECT DETECTOR

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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 declare that the work in this innovation project report was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and it is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This topic has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

In the event that my innovation project 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

Defect is one of the most critical issues that can arise at any phase of building, particularly in the IBS sector. It can occur during construction, installation, and after a facility has been completed. Nevertheless, defects might be difficult to detect since they frequently appear within the surface. This is when infrared camera technology is utilized. Widespread use of Infrared Thermography (IRT) in construction and other industries has contributed to the longevity of buildings. To get such performance, it is necessary to overcome the challenges or issues that serve as impediments to accomplishment. IRT is frequently carried out using both passive and active techniques, with active thermography requiring an external stimulus to induce surface heating. According to prior study, the present efficiency of IRT equipment is affected by a number of factors, the most significant of which is the time-consuming approach of active thermography, which requires an external heat source such as a halogen light. By pinpointing the primary problem, it offers the chance and a platform to suggest innovative solutions. As a result, a novel innovation concept is offered to address the highlighted problem and simultaneously encourage the usage of IRT tools with additional features. The idea's development is assisted by desktop research and simulation. Based on a performance comparison with current IRT cameras, it was determined that this innovation of an IRT tool with Heating Light offers a more efficient method for building fault inspection. Therefore, it is anticipated that this invention would have significant effects on the IBS business in Malaysia, particularly in student accommodation complexes.