

UNIVERSITI TEKNOLOGI MARA

**THE RELIABILITY STUDIES OF TERRESTRIAL
LASER SCANNER FOR DIRECT AND INDIRECT
POST-PROCESSING APPROACHES FOR AS-BUILT
PLAN**

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of the requirements for the degree of
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AUTHOR'S DECLARATION

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

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.


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ABSTRACT

In recent year, terrestrial laser scanner (TLS) become popular to collect the data for strata title. TLS requires less manpower and time to collect the data and also manage to collect the data in an inaccessible place. In building mapping, the point cloud data obtained from the terrestrial laser scanner can be processed using either direct or indirect approaches in post-processing phases to generate the as-built plan. Both methods, however, have their own limitation where direct post-processing approaches require extensive experience and expertise in processing point cloud data. However, it takes a lot more time for indirect post-processing methods and propagates more error compared to the direct post-processing approach. Thus, further study is necessary to robustly identify the quality of the as-built plan produce from difference post-processing approaches of TLS data. For that purpose, this study focuses on investigating the reliability of direct and indirect post-processing approaches from TLS data to produce two-dimensional (2D) as-built plan for strata title application. For differentiate purpose, the comparison of dimensional analysis between the as-built plan produce from TLS data, the as-built plan obtains from total station measurement and existing as-built plan from Development, And Facility Management Unit of UiTM Arau will be examined and analyzed. In the end, this study can help to determine the reliability of as-built plan from direct and indirect post-processing approaches of TLS data.

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