

ABSTRAK

PENERAPAN *BUILDING INFORMATION MODELING* (BIM) DALAM PERBANDINGAN *QUANTITY TAKE OFF MATERIAL* PADA JEMBATAN KECAMATAN WAY BUNGUR KABUPATEN LAMPUNG TIMUR

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Pengaruh digitalisasi dalam industri memberikan kesempatan yang lebih besar dan luas dalam mencari desain konstruksi modern yang inovatif dan berkelanjutan. *Building Information Modeling* (BIM) merupakan perkembangan digital yang berdampak besar dalam sektor industri *Architecture, Engineering, and Construction* (AEC). Penelitian ini mengimplementasikan *Building Information Modelling* (BIM) di dalam pengerjaannya. Objek model berdasarkan data pada Proyek Pembangunan Jembatan Kali Pasir Ruas Jalan Desa Tanjung Tirto–Desa Kalipasir, Lampung Timur. Tujuan penelitian adalah untuk mengetahui selisih perhitungan volume *quantity take off* metode konvensional dengan volume *quantity take off output software Autodesk Revit 2024 student version*. Metode penelitian yang digunakan berupa pemodelan struktur 3D menggunakan *software Autodesk Revit* yang berfokus pada bagian *rebar* jembatan. Setelah bagian jembatan selesai dimodelkan, *output quantity take off* berdasarkan *software* akan dianalisis lebih lanjut melalui *Microsoft Excel*. Hasilnya, didapat persentase selisih perbandingan antara metode konvensional dan metode berbasis BIM sebesar 4,80 % untuk tulangan. Diperoleh total volume tulangan sebesar 83225.73 kg dari metode berbasis BIM, sebesar 87419.50 kg dengan metode konvensional yang menghasilkan selisih sebesar 4193.76 kg.

Kata kunci: *Building Information Modeling* (BIM), *Autodesk Revit*, *Quantity Take Off Material*, Jembatan.

ABSTRACT

IMPLEMENTATION OF BUILDING INFORMATION MODELING (BIM) IN COMPARISON OF QUANTITY TAKE OFF MATERIAL ON WAY BUNGUR SUB-DISTRICT BRIDGE EAST LAMPUNG REGENCY

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The influence of digitization in the industry has provided wider and greater opportunities in exploring innovative and sustainable modern construction designs. Building Information Modeling (BIM) is a significant digital advancement in the Architecture, Engineering, and Construction (AEC) sector. This study applies Building Information Modeling (BIM) in its implementation. The model object is based on document from the Kali Pasir Bridge Construction Project in Tanjung Tirta Village–Kalipasir Village, East Lampung. The aim of the research is to determine the discrepancy in volume quantity take-off calculations between conventional methods and the Autodesk Revit 2024 student version software based. The research method involves 3D structural modeling using Autodesk Revit software, with specific attention on the bridge's rebar. Once the bridge is fully modeled, the quantity take-off output based on the software will be further analyzed using Microsoft Excel. The result shows a percentage discrepancy of 4.80% for the reinforcement between the conventional method and the BIM-based method. The obtained total reinforcement volume from the BIM-based method and the conventional method are 83225.73 kg and 87419.50 kg, respectively, leading to a variation of 4193.76 kg.

Key words: Building Information Modeling (BIM), Autodesk Revit, Quantity Take Off Material, Bridge.