

ABSTRACT (INGGRIS)

QUANTITY TAKE-OFF CALCULATION USING BIM (REVIT) IN THE CONSTRUCTION OF THE ADMINISTRATION OFFICE BUILDING OF SMPN 2 BENGKALIS

(CASE STUDY: BENGKALIS ISLAND)

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Abstract

Building Information Modeling (BIM) is a technology that can be used to digitally and integratively model buildings, thereby supporting the planning process and the calculation of construction work quantities. Conventional quantity calculations are still based on two-dimensional working drawings and require relatively more time and a high level of accuracy. This study aims to compare the results of Quantity Take Off (QTO) using the conventional method and Autodesk Revit, as well as to determine the application of BIM in the modeling of the SMPN 2 Bengkalis Administration Office Building. The research method involved modeling the structural elements of the building in three dimensions based on the working drawings, followed by calculating concrete volumes and reinforcement weights using the Schedule feature in Autodesk Revit. The results showed that the concrete volume calculations using Autodesk Revit produced values close to those obtained using the conventional method, with the largest difference of 1.65% occurring in lintel beams. Therefore, the application of Autodesk Revit improves the efficiency and accuracy of QTO calculations and facilitates construction information management.

Keywords: Autodesk Revit, BIM, conventional, QTO, work volume.