

ANALISIS PERBANDINGAN PERHITUNGAN VOLUME PEKERJAAN BETON BERTULANG DENGAN METODE SOFTWARE AUTODESK REVIT DAN KONVENSIONAL

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ABSTRAK

Perkembangan dunia konstruksi pada era globalisasi sekarang berkembang sangat pesat terlebih bagi negara berkembang seperti Indonesia ini. Dalam pekerjaan pembangunan suatu proyek konstruksi, tentu sebelumnya diperlukan proses perencanaan yang matang. Sebagai salah satu proses dalam perencanaan konstruksi, proses perhitungan volume item pekerjaan mempunyai peranan yang cukup penting. Perkembangan pesat dan kompleksitas yang tinggi, memaksa pihak penyedia jasa konstruksi untuk lebih efektif dan efisien dalam melaksanakan pekerjaannya. Terdapat beberapa software *Building Information Modeling* (BIM) yang telah digunakan pada dunia konstruksi saat ini, salah satunya adalah *software Autodesk® Revit®*.

Penelitian ini bertujuan untuk mengetahui hasil perbandingan dan selisih hitungan volume pekerjaan beton bertulang pembangunan gedung dengan metode *software Autodesk® Revit®* dan metode perhitungan konvensional. Berdasarkan pengolahan data yang telah dilaksanakan pada dua lokasi proyek dan dengan menggunakan kedua metode tersebut ditemukan selisih hasil baik volume beton maupun berat besi. Perhitungan dan pemodelan dilakukan dengan cara persegmen *axis* bangunan. Proyek Pembangunan Gedung Kanca BRI Muntilan Magelang Jawa Tengah selisih nilai volume beton sebesar 2,92% lebih besar revit dan berat besi sebesar 3,39% lebih kecil revit. Sedangkan pada Proyek Pembangunan Gedung Penunjang Medik Tahap I (Radiologi Dan Ruang Operasi) RSUD Suradadi Tegal selisih nilai volume beton sebesar 0,79% lebih besar revit dan berat besi sebesar 6,85% lebih kecil revit.

Kata kunci: *Building Information Modeling* (BIM), *software Autodesk® Revit®*, Volume Pekerjaan

COMPARISONAL ANALYSIS OF REINFORCED CONCRETE WORKING VOLUME CALCULATIONS WITH AUTODESK REVIT AND CONVENTIONAL SOFTWARE METHODS

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ABSTRACT

The development of the construction world in the current era of globalization is growing very rapidly, especially for developing countries like Indonesia. In the construction work of a construction project, of course, a careful planning process is required beforehand. As one of the processes in construction planning, the process of calculating the volume of work items has an important role. Rapid development and high complexity, forcing construction service providers to be more effective and efficient in carrying out their work. There are several Building Information Modeling (BIM) software that have been used in the construction world today, one of which is Autodesk® Revit® software.

This study aims to determine the results of the comparison and difference in the calculation of the volume of reinforced concrete work in building construction with the Autodesk® Revit® software method and conventional calculation methods. Based on data processing that has been carried out at two project sites and using both methods, it is found that there are differences in the results of both the volume of concrete and the weight of iron. Calculation and modeling is done by segmenting the axis of the building. Kanca Building Project BRI Muntilan Magelang, Central Java, the difference in the value of the concrete volume is 2.92% larger than the revit and the weight of iron is 3.39% smaller than the revit. While in the Phase I Medical Support Building Construction Project (Radiology and Operating Room) Suradadi Hospital Tegal, the difference in the value of the concrete volume is 0.79% greater than the Revit and the weight of the iron is 6.85% smaller than the revit.

Keywords: Building Information Modeling (BIM), Autodesk® Revit® software, Work Volume