

ABSTRAK

Perkembangan zaman mempengaruhi bidang pekerjaan industri, salah satunya sektor konstruksi. Banyak teknologi diciptakan untuk mempermudah pekerjaan konstruksi bangunan serta infrastruktur, salah satu teknologinya yaitu *Building Information Modeling* (BIM). BIM sendiri merupakan sistem aplikasi digital yang menggabungkan *design* pemodelan 3D bangunan dengan informasi teknisnya. Penelitian ini dilakukan dengan tujuan untuk mengetahui kelebihan penggunaan *software Autodesk Revit 2023* untuk pekerjaan *Quantity Take-Off* dan menganalisa perbedaan hasil perhitungan QTO berbasis *Building Information Modeling* dan QTO manual. Studi kasus penelitian adalah MTsN 2 Bukittinggi. Penelitian dilakukan dengan membuat BIM Model Gedung tersebut berdasarkan dokumen DED dengan menggunakan *software Autodesk Revit 2023*. Selanjutnya BIM Model tersebut dihitung volumenya dengan menggunakan *Microsoft Excell*. Hasil perhitungannya kemudian dibandingkan dan dianalisa. Hasil penelitian menunjukkan bahwa ada beberapa kelebihan dan kekurangan dalam penggunaan *software Autodesk Revit 2023* untuk pekerjaan QTO. Item Pekerjaan struktur yang dihitung sebanyak 23 item pekerjaan struktur yang dihitung, ditemukan 5 item pekerjaan yang memiliki perhitungan volume yang sama, 12 item pekerjaan memiliki perhitungan volume berbeda dengan persentase volume >0% sampai 10%, dan 6 item pekerjaan memiliki perhitungan volume berbeda dengan persentase >10% sampai 20%. Item arsitektur sebanyak 23 item pekerjaan arsitektur yang dihitung, ditemukan 2 item pekerjaan memiliki perhitungan volume berbeda dengan persentase volume >0% sampai 10%, 1 item pekerjaan memiliki perhitungan volume berbeda dengan persentase >10% sampai 20%, 3 item pekerjaan memiliki perhitungan volume berbeda dengan persentase volume >20% sampai 30%, 1 item pekerjaan memiliki perhitungan volume berbeda dengan persentase >30% sampai 40%, dan 16 item pekerjaan tidak dapat volume pekerjaannya.

Kata Kunci : *quantity take-off, building information modeling, autodesk revit*

ABSTRACT

The development of the times affects the field of industrial work, one of which is the construction sector. Many technologies are designed to facilitate building and infrastructure construction work, one of which is Building Information Modeling (BIM). BIM itself is a digital application system that combines the 3D modeling design of buildings with technical information. This study was conducted with the aim of determining the advantages of using Autodesk Revit 2023 software for Quantity Take-Off work and analyzing the differences in the results of QTO calculations based on Building Information Modeling and manual QTO. The case study of the research is MTsN 2 Bukittinggi. The research was carried out by creating a BIM Model of the Building based on the DED document using Autodesk Revit 2023 software. Furthermore, the BIM Model is calculated in volume using Microsoft Excell. The results of the calculation are then compared and analyzed. The results of the study show that there are several advantages and disadvantages in using Autodesk Revit 2023 software for QTO work. The structure work items that were calculated were 23 structural work items that were calculated, it was found that 5 work items had the same volume calculation, 12 work items had different volume calculations with a volume percentage of >0% to 10%, and 6 work items had different volume calculations with a percentage of >10% to 20%. Architecture items as many as 23 architectural work items were calculated, it was found that 2 work items had different volume calculations with a percentage of >0% to 10% volume, 1 work item had a different volume calculation with a percentage of >10% to 20%, 3 work items had different volume calculations with a percentage of >20% to 30% volume, 1 work item had a different volume calculation with a percentage of >30% to 40%, and 16 work items cannot get their work volume.

Keywords : quantity take-off, building information modeling, autodesk revit