

## INTISARI

Penelitian ini menganalisis penerapan Building Information Modeling (BIM) menggunakan Autodesk Revit dan Cubicost TAS dalam menghitung volume beton pada proyek konstruksi Gedung Eka Hospital Juanda, serta membandingkannya dengan metode konvensional berbasis MC-0. Pendekatan kuantitatif dengan studi kasus digunakan untuk memodelkan elemen struktural beton meliputi bore pile, kolom, balok dan tie beam, slab, shear wall, serta tangga. Hasil perhitungan menunjukkan volume beton MC-0: bore pile 7.582,63 m<sup>3</sup>, kolom 4.293,19 m<sup>3</sup>, balok dan tie beam 6.055,96 m<sup>3</sup>, slab 10.511,80 m<sup>3</sup>, shear wall 6.642,71 m<sup>3</sup>, dan tangga 268,35 m<sup>3</sup>, dengan total 35.354,64 m<sup>3</sup>. Pada Autodesk Revit, hasilnya adalah bore pile 7.563,00 m<sup>3</sup>, kolom 4.286,14 m<sup>3</sup>, balok dan tie beam 6.045,85 m<sup>3</sup>, slab 10.301,43 m<sup>3</sup>, shear wall 6.770,26 m<sup>3</sup>, dan tangga 255,91 m<sup>3</sup>, dengan total 35.222,59 m<sup>3</sup>. Sedangkan pada Cubicost TAS, bore pile 7.563,00 m<sup>3</sup>, kolom 4.286,14 m<sup>3</sup>, balok dan tie beam 6.045,85 m<sup>3</sup>, slab 10.110,44 m<sup>3</sup>, shear wall 7.003,81 m<sup>3</sup>, dan tangga 144,81 m<sup>3</sup>, dengan total 35.109,05 m<sup>3</sup>. Perbedaan terbesar terdapat pada elemen tangga, sedangkan elemen lainnya memiliki hasil yang relatif mendekati. BIM terbukti lebih efisien dalam waktu, karena proses ekstraksi volume dapat dilakukan dalam hitungan menit setelah pemodelan selesai, sekaligus memberikan akurasi yang lebih tinggi pada geometri kompleks

**Kata Kunci:** *Building Information Modeling (BIM), Quantity Take-Off (QTO), Autodesk Revit, Cubicost TAS.*

## ABSTRACT

*This study analyzes the application of Building Information Modeling (BIM) using Autodesk Revit and Cubicost TAS for calculating concrete volumes in the Eka Hospital Juanda building project, and compares it with the conventional MC-0 method. A quantitative case study approach was applied to model structural concrete elements including bore piles, columns, beams and tie beams, slabs, shear walls, and stairs. The results show that MC-0 recorded: bore pile 7,582.63 m<sup>3</sup>, columns 4,293.19 m<sup>3</sup>, beams and tie beams 6,055.96 m<sup>3</sup>, slabs 10,511.80 m<sup>3</sup>, shear walls 6,642.71 m<sup>3</sup>, and stairs 268.35 m<sup>3</sup>, totaling 35,354.64 m<sup>3</sup>. Autodesk Revit produced: bore pile 7,563.00 m<sup>3</sup>, columns 4,286.14 m<sup>3</sup>, beams and tie beams 6,045.85 m<sup>3</sup>, slabs 10,301.43 m<sup>3</sup>, shear walls 6,770.26 m<sup>3</sup>, and stairs 255.91 m<sup>3</sup>, totaling 35,222.59 m<sup>3</sup>. Cubicost TAS produced: bore pile 7,563.00 m<sup>3</sup>, columns 4,286.14 m<sup>3</sup>, beams and tie beams 6,045.85 m<sup>3</sup>, slabs 10,110.44 m<sup>3</sup>, shear walls 7,003.81 m<sup>3</sup>, and stairs 144.81 m<sup>3</sup>, totaling 35,109.05 m<sup>3</sup>. The largest difference was observed in the stair element, while other elements yielded relatively close results. BIM proved to be more time-efficient, with volume extraction completed within minutes after modeling, and provided higher accuracy for complex geometries..*

**Keywords:** *Building Information Modeling (BIM), Quantity Take-Off (QTO), Autodesk Revit, Cubicost TAS.*