

DAFTAR ISI

| | |
|---|------|
| HALAMAN SAMPUL | i |
| HALAMAN JUDUL | i |
| HALAMAN PENGESAHAN | ii |
| HALAMAN PERNYATAAN | iii |
| HALAMAN PERSEMBAHAN | iv |
| KATA PENGANTAR | v |
| DAFTAR ISI | vi |
| DAFTAR TABEL | ix |
| DAFTAR GAMBAR | xi |
| INTISARI | xiii |
| ABSTRACT | xiv |
| BAB I PENDAHULUAN | 1 |
| 1.1 Latar Belakang | 1 |
| 1.2 Rumusan Masalah | 2 |
| 1.3 Tujuan Penelitian | 2 |
| 1.4 Batasan Masalah | 2 |
| 1.5 Manfaat Penelitian | 2 |
| 1.6 Keaslian Penelitian | 3 |
| BAB II TINJAUAN PUSTAKA | 5 |
| 2.1 <i>Building Information Modelling</i> (BIM) | 5 |
| 2.2 Perubahan Desain | 5 |
| 2.3 Revit | 7 |
| 2.4 Solibri | 7 |
| BAB III LANDASAN TEORI | 9 |
| 3.1 <i>Building Information Modelling</i> (BIM) | 9 |
| 3.2 Perubahan Desain | 10 |
| 3.3 <i>Quantity Take-Off</i> (QTO) | 11 |
| 3.4 Analisis Harga Satuan Pekerjaan (AHSP) | 11 |
| 3.5 Rencana Anggaran Biaya (RAB) | 12 |
| BAB IV METODE PENELITIAN | 13 |
| 4.1 Perangkat Lunak Pendukung Penelitian | 13 |



| | |
|--|----|
| 4.1.1 Revit | 13 |
| 4.1.2 Solibri | 13 |
| 4.2 Tahapan Penelitian | 13 |
| 4.2.1 Studi literatur | 14 |
| 4.2.2 Pengumpulan data | 14 |
| 4.2.3 Pemodelan desain awal (Model A)..... | 15 |
| 4.2.4 Pemodelan desain baru (Model B) | 15 |
| 4.2.5 Komparasi model..... | 16 |
| 4.2.6 <i>Quantity Take Off</i> (QTO) | 16 |
| 4.2.7 Perhitungan rencana anggaran biaya (RAB) | 16 |
| 4.2.8 Penulisan tugas akhir | 16 |
| BAB V HASIL DAN PEMBAHASAN | 17 |
| 5.1 Pemodelan | 17 |
| 5.1.1 Hirarki..... | 17 |
| 5.1.2 Pemeriksaan model..... | 18 |
| 5.1.3 Pembagian fase | 19 |
| 5.1.4 Modifikasi permodelan..... | 21 |
| 5.2 Analisis visual perubahan model | 22 |
| 5.2.1 Existing..... | 24 |
| 5.2.2 Foundation..... | 24 |
| 5.2.3 Tie beam + slab level 1 | 27 |
| 5.2.4 Column level 1 | 30 |
| 5.2.5 Beam + slab level 2 | 32 |
| 5.2.6 Column level 2 | 34 |
| 5.2.7 Beam + slab level 3 | 36 |
| 5.2.8 Column level 3 | 38 |
| 5.2.9 Beam + slab level 4 | 40 |
| 5.2.10 Column level 4 | 42 |
| 5.2.11 Beam + slab level 5 | 44 |
| 5.2.12 Column level 5 | 46 |
| 5.2.13 Beam + slab service deck | 48 |
| 5.2.14 Column service deck | 50 |
| 5.3 <i>Quantity Take-Off</i> (QTO)..... | 51 |



| | |
|--|----|
| 5.3.1 Pekerjaan fondasi..... | 54 |
| 5.3.2 Pekerjaan kolom | 55 |
| 5.3.3 Pekerjaan balok | 56 |
| 5.3.4 Pekerjaan pelat lantai..... | 58 |
| 5.3.5 Pekerjaan dinding struktural..... | 58 |
| 5.3.6 Rekapitulasi QTO..... | 59 |
| 5.4 Analisis Harga Satuan Pekerjaan (AHSP) | 60 |
| 5.4.1 Tenaga kerja | 60 |
| 5.4.2 Bahan..... | 61 |
| 5.4.3 Peralatan | 61 |
| 5.4.4 Harga satuan pekerjaan (HSP)..... | 61 |
| 5.5 Rencana Anggaran Biaya (RAB) | 62 |
| 5.6 Diskusi..... | 64 |
| BAB VI KESIMPULAN DAN SARAN | 67 |
| 6.1 Kesimpulan | 67 |
| 6.2 Saran..... | 67 |
| DAFTAR PUSTAKA | 68 |
| LAMPIRAN..... | 69 |