

**ANALISIS PENERAPAN *BUILDING INFORMATION
MODELLING (BIM)* PADA PERANCANGAN
BANGUNAN HIJAU BERDASARKAN *RATING TOOLS
GREEN BUILDING COUNCIL INDONESIA*
(Studi Kasus: Gedung Fakultas Kedokteran
Unika Soegijapranata BSB City)**

TUGAS AKHIR

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ABSTRACT

**ANALYSIS OF THE APPLICATION OF BUILDING INFORMATION
MODELLING (BIM) IN DESIGN GREEN BUILDINGS BASED ON
RATING TOOLS GREEN BUILDING COUNCIL INDONESIA
(Case Study: Medical Faculty Building
Unika Soegijapranata BSB City)**

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The construction sector plays an important role in economic growth through accelerated infrastructure development programs which have an impact on increasing project complexity. The growth of the construction sector has an environmental impact, thereby encouraging the concept of environmentally friendly buildings (green buildings) for sustainable development. The green building certification process involves a Design Recognition (DR) stage during planning. Complexity at the design stage requires technological advances, such as Building Information Modeling (BIM), to increase green building performance. This paper focuses on analyzing the contribution of BIM in the design of environmentally friendly buildings in the modern construction era. This research is a qualitative study that uses objective data related to case studies in the form of working drawings and Appropriate Site Development (ASD), Energy Efficiency Conservation (EEC), and Water Conservation (WAC) category assessment data. The assessment of BIM's contribution to the green building is measured based on potential mapping through literature review and interviews with BIM practitioners and the greenship assessment team. Based on the results of BIM integration mapping in the ASD, EEC, and WAC, the application of BIM at the DR green building stage contributes around 88,46% in average of ASD, around 83,33% in average of EEC, and around 41,17% in average of WAC assessment criteria.

Keywords : green building, Green Building Rating Rystem (GBRS), greenship, Building Information Modelling (BIM), integration BIM and green building



ABSTRAK

ANALISIS PENERAPAN *BUILDING INFORMATION MODELLING* (BIM) PADA PERANCANGAN BANGUNAN HIJAU BERDASARKAN *RATING TOOLS* *GREEN BUILDING COUNCIL* INDONESIA (Studi Kasus: Gedung Fakultas Kedokteran Unika Soegijapranata BSB City)

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Sektor konstruksi berperan penting dalam pertumbuhan ekonomi melalui program percepatan pembangunan infrastruktur yang berdampak pada peningkatan kompleksitas proyek. Pertumbuhan sektor konstruksi memberikan dampak terhadap lingkungan, sehingga mendorong konsep bangunan berkelanjutan salah satunya melalui *green building* untuk memaksimalkan upaya pelaksanaan pembangunan berkelanjutan. Proses sertifikasi bangunan hijau melibatkan tahap *Design Recognition* (DR) pada saat perencanaan. Kompleksitas pada tahap desain membutuhkan penggunaan kemajuan teknologi seperti penggunaan *Building Information Modelling* (BIM), untuk meningkatkan kinerja bangunan hijau. Penelitian ini berfokus pada analisis kontribusi BIM dalam desain bangunan hijau di era konstruksi modern. Penelitian ini merupakan penelitian kualitatif yang menggunakan data obyektif terkait studi kasus berupa gambar kerja dan data penilaian kategori *Appropriate Site Development* (ASD), *Energy Efficiency Conservation* (EEC), dan *Water Conservation* (WAC). Penilaian kontribusi BIM terhadap bangunan hijau diukur berdasarkan pemetaan potensi melalui studi literatur dan wawancara dengan praktisi BIM dan tim penilai *greenship*. Berdasarkan hasil pemetaan integrasi BIM pada kategori ASD, EEC, dan WAC, penerapan BIM pada tahap DR *green building* memberikan kontribusi sekitar 88,46% pada kategori ASD, sekitar 83,33% pada kategori EEC, dan sekitar 41,17% pada kategori WAC yang diukur pada setiap kriteria penilaian.

Keywords : bangunan hijau, *Green Building Rating System* (GBRS), *greenship*, *Building Information Modelling* (BIM), hubungan integrasi BIM dan *green building*