INTISARI

Pengembangan perumahan real estate di kabupaten Sleman cukup signifikan. Ditinjau dari jumlah unitnya, perumahan yang ada tergolong perumahan skala kecil yang berjumlah puluhan sampai ratusan. Hal tersebut berdampak pada lingkungan terkait dengan penggunaan lahan, konsumsi energi, emisi dan mobilitas. Oleh sebab itu, model perumahan real estate berkelanjutan perlu dikembangkan dengan memaksimalkan aspek *welfare* dan *Environmental Damage* yang minimal sehingga menghasikan *Throughput* yang maksimal. UMI dengan 4 jenis simulasi di dalamnya yaitu FAR, operational Energy, Life Cycle, Mobility digunakan sebagai metode simulasi. Perumahan Bale Mulia Residence dipilih sebagai objek studi berdasarkan teknik *Purposive Sampling* guna mengetahui tingkat dan faktor keberlanjutan berdasarkan UMI pada perumahan yang ada. Hasil studi kondisi eksisting menunjukkan bahwa aspek mobility perlu dimaksimalkan. Nilai **FAR** (0.47) dan **Mobility** (*Walkability* (25), *Bikeability* (25) **pada lingkungan perumahan**; *Walkability* (69), *Bikeability* (72) **pada lingkungan perumahan dan sekitarnya***)*. Sementara itu, intensitas nilai **Operational Energy** (30 kWh/m2/Year) dan **Life Cycle** (*Embodied Energy* (8.8 GJ/m2)*; Embodied Carbon* (175.35 kgCO2/m.)). Sementara itu pada model menunjukkan tingkat keberlanjutan meningkat. Nilai **FAR** (0.42) dan **Mobility** (*Walkability* (81), *Bikeability* (82) **pada lingkungan perumahan**; *Walkability* (90), *Bikeability* (92) **pada lingkungan perumahan dan sekitarnya***)*. Sementara itu, intensitas nilai **OE** (29 kWh/m2/Year) dan **Life Cycle** (*EE* (8.9 GJ/m2)*; **EC*** (178.91 kgCO2/m.)). Dan **Model perumahan real estate berkelanjutan di kabupaten Sleman** memiliki nilai **FAR** (maksimal 3.6), **Operational energy** (Maksimal 14.58), **Life Cycle** (EE Maksimal 16.3; EC Maksimal 405), **Mobility** (Minimal Walkability 70; Minimal Bikeability 70).

Kata Kunci : Model, Perumahan Real Estate Berkelanjutan, Urban Modelling Interface, Kabupaten Sleman

ABSTRACT

The development of residential real estate in Sleman Regency is quite significant. Judging from the number of units, existing housing is classified as small-scale housing, which amounts to tens to hundreds. This has an impact on the environment related to land use, energy consumption, emissions and mobility. Therefore, a sustainable real estate housing model needs to be developed by maximizing the welfare aspects and minimizing Environmental Damage so as to produce maximum Throughput. UMI with 4 types of simulations namely FAR, operational Energy, Life Cycle, Mobility used as a simulation method. Bale Mulia Residence Housing was chosen as the object of study based on Purposive Sampling techniques to determine the level and sustainability factors based on UMI in existing housing. The results of existing condition show that aspects of mobility need to be maximized. The values of **FAR** (0.47) and **Mobility** (Walkability (25), Bikeability (25) in the residential environment, Walkability (69), Bikeability (72) in the residential environment and surroundings). Meanwhile, the intensity of **Operational Energy** (30 kWh / m2 / Year) and **Life Cycle** (Embodied Energy (8.8 GJ / m2); Embodied Carbon (175.35 kgCO2 / m)). Meanwhile on the model shows the level of sustainability increases. The values of **FAR** (0.42) and **Mobility** (Walkability (81), Bikeability (82) in the residential environment; Walkability (90), Bikeability (92) in the residential environment and surroundings). Meanwhile, the intensity of the value of **OE** (29 kWh / m2 / Year) and **Life Cycle** (EE (8.9 GJ / m2); EC (178.91 kgCO2 / m.)). Then, the model of sustainable real estate housing in Sleman Regency has value of FAR (Maximal 3.6), **Operational energy** (Maximal 14.58), **Life Cycle** (EE Maximal 16.3; EC Maximal 405), **Mobility** (Minimal Walkability 70; Minimal Bikeability 70).

Key Words : Model, Sustainable Real Estate Housing, Urban Modelling Interface, Sleman Regency