

## Model penataan ruang berbasis kenyamanan termal di kawasan transit oriented development (TOD) Jakarta = Urban spatial model based on human thermal comfort in transit oriented development (TOD) area in Jakarta.

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### Abstrak

Sejalan dengan pengembangan Sistem Angkutan Umum Massal (SAUM) terdapat upaya untuk mendorong pengembangan kawasan Transit Oriented Development (TOD), yang bertujuan mendorong mobilitas dengan berjalan kaki, bersepeda dan menggunakan angkutan umum. Penelitian ini bertujuan untuk menganalisis kondisi tata ruang, kondisi iklim mikro dan kenyamanan termal kawasan TOD. Pemodelan iklim mikro menggunakan ENVI-met atas kondisi eksisting Kawasan Dukuh Atas menunjukkan bahwa suhu udara tertinggi terjadi pada pukul 16.00 WIB, kecepatan angin tinggi terdapat pada jalan yang orientasinya searah dengan arah angin. Hasil pemodelan rencana TOD menunjukkan bahwa suhu udara cenderung lebih rendah dibandingkan kondisi eksisting, kecepatan angin meningkat pada street canyon yang berorientasi searah dengan arah angin namun menurun apabila tegak lurus arah angin. Seluruh areal mulai pukul 10.00-17.00 masuk dalam kategori tidak nyaman secara termal, dengan puncak ketidaknyaman terjadi pada pukul 13.00 dan 14.00. Nilai PET rencana TOD lebih rendah dibandingkan kondisi eksisting, mengindikasikan rencana TOD dapat meningkatkan kenyamanan termal.

.....In line with the development of the Mass Public Transportation System (SAUM) there are efforts to encourage the development of the Transit Oriented Development (TOD) area, which aims to encourage mobility by walking, cycling and using public transportation. This study aims to analyze the spatial conditions, microclimate conditions and thermal comfort of the TOD area. Microclimate modeling using ENVI-met on the existing conditions of the Upper Dukuh Area shows that the highest air temperature occurs at 16.00 WIB, high wind speeds are found on roads that are oriented in the same direction as the wind direction. The results of TOD planning modeling indicate that the air temperature tends to be lower than the existing conditions, the wind speed increases in the street canyon which is oriented in the direction of the wind but decreases when it is perpendicular to the wind direction. The entire area from 10:00 a.m. to 5:00 p.m. was categorized as thermally uncomfortable, with peak discomfort occurring at 1:00 p.m. and 2:00 p.m. The PET design TOD value is lower than the existing condition, indicating that the TOD plan can improve thermal comfort.