

ASESMEN INFRASTRUKTUR PERMUKIMAN SEMPADAN SUNGAI DELI KOTA MEDAN MELALUI ANALISIS SWOT ARSITEKTURAL

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ABSTRAK

Kawasan permukiman Lingkungan V Kelurahan Labuhan Deli di sempadan Sungai Deli, Kecamatan Medan Marelan, Kota Medan, menghadapi permasalahan infrastruktur dasar yang serius akibat tekanan urbanisasi, keterbatasan lahan, dan tingginya kerentanan terhadap banjir rob. Penelitian ini menggunakan metode deskriptif kualitatif melalui observasi lapangan, wawancara mendalam, dan dokumentasi, dengan analisis kelayakan infrastruktur serta SWOT-TOWS sebagai dasar serta merumuskan strategi peningkatan infrastruktur. Hasil penelitian menunjukkan kawasan memperoleh nilai kekumuhan sebesar 40, termasuk kategori Kumuh Sedang, klasifikasi B1, dan Skala Prioritas Penanganan 2 (prioritas tinggi). Tiga dari tujuh komponen infrastruktur berada dalam kondisi tidak layak, ditandai oleh 77% jaringan drainase (1.678 meter) rusak atau tidak tersedia, 94% rumah belum memiliki sarana persampahan yang layak, serta belum tersedianya infrastruktur proteksi kebakaran. Berdasarkan sintesis analisis SWOT dan kondisi eksisting, penelitian ini menghasilkan strategi peningkatan infrastruktur dengan konsep Kampung Adaptif Banjir Rob melalui tiga pola penanganan, yaitu pemugaran pada zona permukiman inti, peremajaan pada zona tepian paloh, dan pemukiman kembali secara selektif bagi 34 bangunan ilegal di atas tanggul Sungai Deli. Rekomendasi penanganan mengintegrasikan aspek teknis, ekologis, sosial, dan budaya nelayan pesisir untuk meningkatkan kualitas hunian serta ketahanan lingkungan permukiman secara berkelanjutan.

Kata kunci: infrastruktur permukiman, sempadan sungai, banjir rob, arsitektur adaptif, kampung adaptif Banjir Rob.

ASSESSMENT OF SETTLEMENT INFRASTRUCTURE ALONG THE DELI RIVER CORRIDOR IN MEDAN CITY USING AN ARCHITECTURAL SWOT ANALYSIS

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ABSTRACT

The residential area of Lingkungan V, Labuhan Deli Village, located along the Deli River in Medan Marelan District, Medan City, faces serious basic infrastructure problems due to urbanization pressure, limited land availability, and high vulnerability to tidal flooding. This study employed a qualitative descriptive method through field observations, in-depth interviews, and documentation. Infrastructure feasibility analysis and SWOT-TOWS analysis were used as the basis for formulating infrastructure improvement strategies. The results indicate that the area obtained a slum score of 40, classified as Moderate Slum, B1 Classification, with Handling Priority Scale 2 (high priority). Three of the seven infrastructure components were found to be inadequate. These conditions include 77% of the drainage network (1,678 m) being damaged or unavailable, 94% of households lacking adequate waste management facilities, and the absence of fire protection infrastructure. Based on the synthesis of the SWOT analysis and existing conditions, this study proposes an infrastructure improvement strategy based on the Tidal Flood Adaptive Kampung concept through three intervention patterns: rehabilitation in the core residential zone, renewal in the paloh-edge transition zone, and selective resettlement of 34 illegal buildings located on the Deli River embankment. The proposed interventions integrate technical, ecological, social, and coastal fishing-community cultural aspects to improve housing quality and strengthen the long-term environmental resilience of the settlement.

Keywords: *residential infrastructure, riverbank settlement, tidal flooding, adaptive architecture, Rob Flood Adaptive Kampung.*