Pengembangan Sistem Pemeliharaan Bangunan Sederhana Berbasis WBS, BIM dan Web untuk Meningkatkan Kinerja Pemeliharaan Gedung di Lingkungan Pemerintah Provinsi DKI Jakarta = Development of Simple Building's Maintenance System Based on WBS, BIM and Web to Improve Building Maintenance Performance in DKI Jakarta Provincial Government

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Abstrak

DKI Jakarta sebagai ibukota Negara Republik Indonesia merupakan provinsi dengan kepadatan penduduk tertinggi di Indonesia. Agar fungsi pelayanan masyarakat dapat berjalan dengan baik, keandalan fasilitas sarana dan prasarana masyarakat di lingkungan Pemerintah Provinsi DKI Jakarta perlu dijaga. Untuk menjaga keandalan bangunan perlu dilakukan pemeliharaan bangunan seperti tertuang dalam Permen PUPR No. 24 th 2008. Berdasarkan survey aset bangunan Dinas Cipta Karya Tata Ruang Provinsi DKI Jakarta tahun 2019 diperoleh data aset bangunan Provinsi DKI Jakarta berjumlah 9823 bangunan. 60% dari bangunan tersebut merupakan bangunan klasifikasi sederhana. Dengan jumlah aset bangunan yang tidak sedikit, kegiatan pemeliharaan bangunan di lingkungan Pemerintah Provinsi DKI Jakarta perlu didukung sistem pemeliharaan yang memadai agar keandalan bangunannya tetap terjaga. Penelitian ini bertujuan mengembangkan sistem pemeliharaan bangunan gedung berbasis: (1) web-based, untuk mendukung aksesibilitas dalam kegiatan pemeliharaan, (2) Work Breakdown Structure (WBS), sebagai dasar pedoman pemeliharaan yang meliputi aktifitas kegiatan pemeliharaan, frekuensi/interval aktifitas kegiatan pemeliharaan, dan (3) Building Information Modelling untuk kemudahan visualisasi, informasi, dan koordinasi data bangunan, dengan objek penelitian bangunan sederhana di lingkungan Pemerintah Provinsi DKI Jakarta. Penggunaan web-based, WBS dan BIM dalam sistem akan meningkatkan kinerja pemeliharaan bangunan pemerintah Provinsi DKI Jakarta. Metodologi yang digunakan dalam penelitian ini adalah validasi pakar, wawancara, studi literatur dan studi kasus. Hasil validasi kemudian dikembangkan dan diintegrasikan kedalam sebuah sistem informasi lalu dilakukan uji coba terhadap sebuah permodelan studi kasus. Hasil penelitian menunjukkan pengembangan sistem pemeliharaan berbasis WBS, BIM dan web dapat meningkatkan kinerja pemeliharaan gedung di lingkungan pemerintah Provinsi DKI Jakarta, dengan nilai peningkatan rata-rata sebesar 20,21%.

.....DKI Jakarta, as the capital of the Republic of Indonesia, has the highest population density in Indonesia, with a population of 16,334 people/km2. Therefore, community facilities and infrastructure within the DKI Jakarta Provincial Government play an important role so that community service can be carried out properly. As one of the main infrastructures, State Buildings must have building reliability as stated in the technical requirements stipulated in Presidential Regulation Number 73 of 2016. Building maintenance is an activity to maintain the building's reliability and infrastructure, and facilities so that the building always functions properly. Based on a survey conducted by the DKI Jakarta Provincial Office for The Creation of Works, Spatial Planning and Land Use in 2019, the building assets of Province DKI Jakarta are 9823. 60% of those buildings were classified as Simple Building category. Due to numerous building assets, building maintenance activities need to be supported by an adequate maintenance system especially for the simple-

classification building. This study aims to develop a building maintenance system based on: (1) web-based, to support accessibility in maintenance activities, (2) Work Breakdown Structure (WBS), as a basis for maintenance guidelines which include maintenance activities, frequency / interval of maintenance activities, and (3) Building Information Modeling for easy visualization, information, and coordination of building data, with the object of simple building research within the DKI Jakarta Provincial Government. The use of web-based, WBS, and BIM in the system could improve building's maintenance performance in DKI Jakarta Provincial Government. The methodology used in this research is expert validation, interviews, literature studies and case studies. The results of expert validation, interviews and literature studies will be developed into an information system and then tested on a case study modeling. The validation results are then developed and integrated into an information system and then tested on a study model case. The results showed that the development of a maintenance system based on WBS, BIM and web can improve the performance of building maintenance within the DKI Jakarta Provincial Government, with an average increase 20.21%.