Pengembangan Sistem Knowledge Management Proses Audit Keselamatan Konstruksi Pada Proyek Rancang Bangun Berbasis Web = Development of the Web-based Knowledge Management System for Contruction Safety Audit Proccess on Desing-Build Projects

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Abstrak

Pembangunan infrastruktur dilakukan secara masif, namun audit keselamatan konstruksi yang selama ini dilakukan belum efektif dalam mencegah terjadinya kecelakaan. Pada umumnya audit yang dilakukan terbatas pada tahap pembangunan (construction). Audit pada tahap design masih sangat jarang dilakukan, padahal menurut teori Szymberski hal-hal yang dilakukan pada tahap design akan berpengaruh lebih tinggi terhadap terjadinya kecelakaan dibanding pada tahap procurement maupun tahap construction. Penelitian ini bertujuan untuk mengembangkan sistem Knowledge Management Proses Audit Keselamatan Konstruksi Tahap Perancangan dan Pembangunan yang terintegrasi Berbasis Web. Metode penelitian yang digunakan adalah kuantitatif dan kualitatif dalam merumuskan pengembangan knowledge management proses audit yang terintegrasi. Tahapan penelitian dimulai dari identifikasi variabel-variabel yang akan menjadi input pengembangan sistem Knowledge Management Proses Audit. Identifikasi bahaya dan risiko dilakukan berdasarkan WBS, dan dibantu dengan pemodelan BIM. Pada pemodelan BIM ini dapat diinput data Rencana Keselamatan Konstruksi yang kemudian diintegrasikan ke dalam sistem Knowledge Management Proses Audit. Pada pengembangan proses audit dilakukan integrasi ISO 19011:2018 dan Peraturan Menteri PUPR Nomor 10 Tahun 2021, sehingga dihasilkan standar proses audit baru yang terdiri dari pengelolaan program audit, pelaksanaan audit, dan kriteria audit. Pengembangan standar proses audit ini kemudian dijadikan knowledge base proses audit berbasis 21 penyebab risiko yang sama. Kemudian diintegrasikan dalam bentuk sistem Knowledge Management Proses Audit berbasis web. Sistem Knowledge Management Proses Audit Keselamatan Konstruksi berbasis web ini dinilai dapat menjadikan proses audit lebih efektif dan efisien, sehingga hasilnya dapat dijadikan perbaikan yang berkelanjutan dalam rangka meningkatkan kinerja keselamatan konstruksi.

.....Infrastructure development is being carried out on a massive scale, but the construction safety audits that have been conducted so far have not been effective in preventing accidents. In general, audits are limited to the construction phase. Audits at the design stage are still very rare, even though according to Szymberski's theory, the things that are done at the design stage will have a greater impact on the occurrence of accidents than at the procurement or construction stages. This study aims to develop an integrated web-based Knowledge Management System for Construction Safety Audit Processes during the Design and Construction Phases. The research method used is quantitative and qualitative in formulating the development of an integrated knowledge management process audit. The research stages begin with the identification of variables that will serve as inputs for the development of the Knowledge Management Process Audit system. Hazard and risk identification is based on the Work Breakdown Structure (WBS) and assisted by BIM modeling. In this BIM modeling, Construction Safety Plan data can be input and then integrated into the Knowledge Management System for the Audit Process. In the development of the audit process, ISO 19011:2018 and Ministry of Public Works and Housing Regulation No. 10 of 2021 are

integrated, resulting in new audit process standards consisting of audit program management, audit implementation, and audit criteria. The development of this audit process standard was then used as a knowledge base for the audit process based on the same 21 risk causes. It was then integrated into a web-based Audit Process Knowledge Management System. This web-based Construction Safety Audit Process Knowledge Management System is considered to make the audit process more effective and efficient, with the results serving as continuous improvements to enhance construction safety performance.