Pengembangan konsep smart home melalui metode Value Engineering dengan mempertimbangkan nilai ekonomi bangunan = Smart Home Design Concept Development Using Value Engineering Approach Considering Economic Value

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Abstrak

Smart home merupakan suatu konsep hunian yang memanfaatkan teknologi yang telah dikembangkan untuk dapat berkomunikasi antar perangkat dan dengan penghuni baik secara internal maupun eksternal bangunan. Penerapan teknologi smart home masih belum banyak diterapkan pada hunian di Indonesia karena adanya penambahan biaya di awal saat memasukkan teknologi tersebut ke dalam hunian sehingga muncul persepsi bahwa hunian smart home lebih mahal jika dibandingkan dengan hunian konvensional. Penelitian ini bertujuan untuk mengembangkan desain konseptual hunian konvensional menjadi hunian berkonsep smart home menggunakan pendekatan Value Engineering sehingga dapat memberikan nilai tambah dari segi kenyamanan, kemudahan, keamanan, efisiensi, dan inovasi dengan mempertimbangkan nilai ekonomi bangunan. Studi literatur, studi Value Engineering, dan analisa initial cost dilakukan untuk mencapai tujuan penelitian. Hasil penelitian menunjukkan bahwa melalui inovasi pemanfaatan teknologi dapat mewujudkan bangunan hunian yang responsif dengan penambahan biaya awal sebesar 10-15% dari bangunan konvensional namun mampu meningkatkan kualitas hidup peghuninya dan penambahan biaya tersebut dapat kembali setelah pemanfaatan teknologi selama 6-10 tahun melalui efisiensi energi dari sistem teknologi cerdas yang digunakan.

.....A smart home is a design concept that utilizes technology development that uses some connected devices which can communicate between devices and with residents both internally and externally in the building. The application of smart home technology is still not widely applied to residences in Indonesia because of the additional initial costs when incorporating this technology into a residence, resulting in the perception that smart home residences are more expensive when compared to conventional residences. This research aims to develop the conceptual design of a conventional residence into a smart home concept using a Value Engineering approach so that it can provide added value in terms of comfort, convenience, security, efficiency, and innovation by considering the economic value of the building. Literature studies, Value Engineering studies, and initial cost analysis were carried out to achieve research objectives. The research results show that through innovation in the use of technology, responsive residential buildings can be created with additional initial costs of 10-15% compared to conventional buildings but they are able to improve the quality of life of the occupants and alsp these additional costs can be returned after using technology for 6-10 years through energy efficiency when intelligent technology system used.