COMPLETE DESIGN OF BUILDINGS USING BIM TECHNOLOGY.

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АННОТАЦИЯ: Информационное моделирование зданий (BIM) — это эффективный и развивающийся подход к управлению сложными строительными проектами. BIM успешно используется в строительной отрасли. Однако было отмечено несколько проблем совместимости. В этой статье представлен обзор литературы по полностью цифровым моделям зданий. В управлении зданиями это включает оценку затрат, энергосбережение, энергетический анализ и отходы.

Кроме того, данное исследование показывает, что эти параметры следует учитывать на ранней стадии проекта. На практике этот тип управления обычно осуществляется на более поздней стадии процесса проектирования, что приводит к перепроектированию всего проекта. Кроме того, представлена информация о различных программных инструментах, которые могут помочь в выборе эффективной структуры. Autodesk Review, Dynamo Factory и HBERT Recovery — это различные выбранные программы. Будущие устремления также предлагаются для реализации.

ABSTRACT: Building Information Modeling (BIM) is an effective and evolving approach to managing complex construction projects. BIM has been successfully used in the construction industry. However, several compatibility issues have been noted. This paper provides a literature review on fully digital building models. In building management this includes cost estimation, energy conservation, energy analysis and waste.

In addition, this study shows that these parameters should be considered at an early stage of the project. In practice, this type of control is usually carried out at a later stage in the design process, resulting in a redesign of the entire project. In addition, information is provided on various software tools that can assist in choosing an effective structure. Autodesk Review, Dynamo Factory and HBERT Recovery are the various programs selected. Future aspirations are also suggested for implementation.

Ключевые слова: технологии информационного моделирования, внедрение технологий BIM, BIM, оценка затрат, энергоэффективность, устойчивые здания.

Key words: information modeling technologies, implementation of BIM technologies, BIM, cost estimation, energy efficiency, sustainable buildings.

Introduction: BIM innovation is another emerging way of managing complex development projects. It mainly focuses on the flow of information about the tasks included in the advanced model. The digital model initially starts with 2D drawings converted into 3D [1] model, followed by 4D model related to project planning, 5D related to cost estimation, 6D related to sustainability, 7D related to safety and 8D related to asset management. . BIM covers a wide range of technologies used in the architecture, engineering and construction

(AEC) industry. But the main need is to develop strong coordination between academia (which constantly develops new research methods) and the AEC industry to apply this emerging technology to real engineering practice. Thus, in this study, we look at cost estimation, carbon accounting, waste management and energy analysis through a BIM approach.

Analysis of the relevant literature. Cost estimation is a laborious and laborious process, which mainly involves modification and rework calculations [2]. This happens in many construction projects. BIM can effectively help reduce rework to produce more reliable estimates than manual estimates. Through the BIM model, it is possible to simulate different scenarios for clients, taking into account financial constraints. About 75% are using BIM for visualization and 55% for estimating purposes. A cost manager should be familiar with the use of BIM modeling for project financial management. The traditional method of evaluation involves meetings, a work plan, schedule, estimate preparation, documentation, reviews and corrections, and then feedback after completion. There are also some problems with using BIM for cost estimation, but when implemented, it reduces the calculation time from weeks to minutes. Issues in BIM software are data interoperability and reliability [3]. Due to the lack of stability, data is lost during transfer between different programs. BIM is intended to create techniques and devices to meet the needs of small-scale industrial procedures for cost estimation.

For example, cost estimation and booking should be redesigned with new innovations in mind. BIM has been adopted by several contractors in the US and is rapidly gaining traction in the construction sector. The future goal of construction data modeling is to have an alternative option for general workers to quit lifting quantities in seconds. This can be the end result for a large general contractor to have separate departments for surveying, and BIM, with agreed contracts, often provides favorable results for contractors. This prevents the feasibility of a detailed BIM model. There should be updates to BIM modeling before it becomes legal with contractors. Organizers and design engineers need to create BIM models. Using BIM technology, we also eliminate waste generation in construction.

Waste generated on the construction site is mainly due to insufficient processing, coordination and cooperation, 4D BIM develops construction planning, scheduling and on-site waste management, and improves communication and information flow. BIM helps organizational members improve the design and execution phases. Furthermore, limiting construction and demolition waste is usually a mixture of excess materials resulting from development and demolition exercises such as excavation, street repair, reconstruction, and demolition [4]. Renovation of existing buildings and recycling of remaining building materials is a real solution to reduce waste and minimize environmental impact. Controlling waste management practices requires a set of specific systems that incorporate better waste management practices and achieve minimum waste [5].

Conclusion: BIM technology is growing in the AEC (engineering and construction) industry. Based on the above observations, we draw the following conclusions: In order to achieve sustainability, it is necessary to focus on and support BIM technology in its projects. Its development is hindered by the lack of professionals, so universities should offer relevant BIM courses. Industrial enterprises should focus on this new technology. Because some features are specifically designed for collaboration, BIM can prove to be very effective in project management.

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