

Free research proposal about green bim

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Introduction

Green building is currently emerging and changing the construction, the design, the renovation process and operation of existing and new buildings and it is reshaping the whole communities and its cities. The terminology currently attached to this new facility is highly performance green building. As the movement is worldwide, the idea is trending at an alarming rate, as it a topic of discussion, for actors, designers, politicians, manufacturers and academicians. Every nation today has realized the need to drive sustainability in every aspect in our life. The undisputable truth that sustainable buildings are environmentally friendly is known to every civilization today. Ireland is one of the nations that are considerably important in realizing the need to join the rest of the world in ensuring sustainability in environment and more so laying strategies to ensure Green Building Information Modeling. The paper is a research proposal on the future of Green Building in the Irish community if it makes a choice of going Green today. Green building modeling if communicated effectively to the constructors, designers, engineers and real estate owners in Ireland today, Ireland will in no doubt move a step ahead in ensuring conducive environment not only to its citizens but also to the world since environmental issues are global (Sayigh, 2013).

Literature shows that there are no enough responsive tools and resources to assist building designers with addressing green constructions in Ireland. Current tools are more of primary text and base more check-sheet tools, which are accessed through software interface. Due to the current need and understanding of the importance of ensuring sustainability there is growing

movement of Building Information Modeling (BIM) in the construction industry. BIM offers new approaches and means to facilitate efficiency of paper-based processes of modeling in construction. For the various stakeholders in the building industry to realize and implement the Green BIM in their activities, there is need to understand the current performance of the Green building information modeling. Environmental issues are currently a high concern in the world. In this paper, I propose that, there is need to understand the performance of Green buildings in Ireland. Specifically, I see it important to aim at building performance ventilation of domestic housing in Ireland. The research proposal will make an outline of the manner and methods that will be used to investigate the performance of building ventilation of domestic housing in Ireland.

Background

BIM and Ireland policies

The use of digital technology to record the construction of buildings is something that is common to various architects. The introduction of this technology has not only enhanced the chances of increasing efficiency with which drawings can be made but also extends to the various ways in which buildings can be documented based on the current prevailing needs of the society for instance the need for building environmentally friendly housing. Using computers to model the reality is a common idea in scientific research, mechanical design, virtual research and social research. Software applications in construction industry and structural engineers has the possibility of creating real representations of objects that contain a lot of information about hardness, structural capability, centre of gravity and

density that can be utilized by algorithms that imitate real environmental conditions like behavior cutting or stress loading mill. Animation software can represent an objects behavior when it moves. The newly developed green buildings are more dynamic in their behavior and it is only through software that their facts can be documented. The other information in addition to graphics that can be documented using BIM include specifications such as performance which could be unique for ventilation housings, sequence of construction usually represented by means of project management networks, costs and clash avoidance algorithm (Kibert, 2008).

Current BIM software used by Engineers Ireland

- IES Solutions Virtual Environment VE-Pro
- DLALux
- Autodesk Ecotect Analysis
- EDSL TAS9 (XP 2008, 2008)

Benefits of Green Building considering BIM utilization

At the present Irish construction, industry is experiencing one of its most challenging and uncertain periods and it will risk facing one of the major cuts in economy. Despite this, Ireland like any other nation is pushing forward for sustainability with every span of its engagement within and outside the government. The government in 2012 ruled that environmentally friendly policies are to prioritize on competing for state contracts valued at 16 billion Euros per annum. This and other initiatives are in place to ensure that green gas emissions are reduced by 20% by the year 2020 (Ireland, 2009). These issues are pushing for high demand of ventilation houses as one of the strategy in avoiding energy consuming housing ventilation methods. The <https://assignbuster.com/free-research-proposal-about-green-bim/>

current artificial methods of ventilation are more energy consumers and thus contribute in high use of carbon fuels, which release green house gases. The directives that have been so far issued including the demand that by the year 2018, the public sector must rent or own buildings that have met energy saving standards and those that are promoting the conversion of the existing buildings to nearly zero standards. The retrofitting and building of these environmentally friendly is a challenge to Ireland since every engineer and architecture in Ireland needs to consider environmentally friendly measures in restructuring a building. The use of sophisticated BIM software is thus required in ensuring that well ventilation considerate buildings are in the proper documentation and design and considerate to environmental concern (Hall, 2006).

Green building designs are associated with increased temperature control, increased ventilation control, increased lighting control in addition to increased day lighting. Increased productivity of workforce has indicated a positive correlation with increased aspects of internal environmental conditions control attainable under green building. Average measured productivity gains of up to 7% is attributed to lighting control, 1. 2% with temperature control, and 1. 8% associated ventilation control. These sums up to 0. 5 to 34% associate benefits. There is also a quantifiable fact about the possibility of green building in attracting and maintaining committed workforce. The design of green house buildings is aimed at maintenance of enjoyable environments that will lure and retain active and motivated workforce as stress and other psychological disorders can be reduced thus leading to healthy living of multi-disciplinary teams and hence longer living. This is achieved through a combination of factors that are aimed at reducing

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tenants' exposure to pollutants that are diseases causing and have a possibility of increasing health costs (Sayigh, 2013).

Various reports have concluded that, green building provide financial benefits that conventional building do not provide. Financial benefits are estimated at 36. 50 to 51. 50 Euros per square foot. This is over ten times more than the additional costs that have been merely attributed with green buildings. The financial benefits are in lower maintenance and operation costs, lower environmental and emissions costs, lower wastes and water costs and lower energy costs. It is therefore, worthy while concluding that green building is the future of building and construction industry as the world is moving towards environmental safety in every aspect of human living (Hall, 2006).

Aims

The BIM technology is a new technology in the building and construction industry. The technology is very important in the building industry. The new technology aims at building houses, which are well ventilated. The representation of BIM in the technology is very important as it visualizes the real building design that contains well-arranged ventilated and constructed houses. The technology aims at:

Improved visualization-When buildings are represented in the green BIM technology it becomes well visualized. Ventilation will be visualized well in the technology. When building houses it is important to take into consideration the ventilation idea. The representation of the green BIM building design in the computer technology focuses on visualization of the ventilation of the house. When houses are represented, using technology the

visualization is improved unlike when the building is not represented using computer technology. The aim of BIM is to represent houses in such a way that the visualization of the house is improved.

The use of Green BIM also will increase the productivity. This is because it is easy to retrieve the information from the computer. When building information is kept in the computer, it will be very easy to retrieve that information unlike when the information is kept in papers]. There the constructors in Ireland will easily retrieve the information they want to use. They can get the information very easily. The building information will easily be retrieved unlike when they are not represented in the computer. The computing technology keeps the housing and building information in a very safe and clear form, which the architectures in Ireland can retrieve and use in building houses. The BIM green technology ensures that the information is available for use by the constructors of houses. The aim of the Green BIM technology is to keep information in such a way that it will be very easy to retrieve in future and get the building going by considering the ventilation technology. In future, the constructors will retrieve building information as the computer keeps the information in such a way that they cannot be lost easily. BIM technology in Ireland aims at keeping the building and construction information for future use by building and construction designers of Ireland houses.

The other aim of the BIM technology in Ireland is to build houses, which conserve the resources. The green BIM technology aims at conserving natural resources for example the energy. Electricity is a very important resource, which is used in very many fields. It is used in industries and homes. In most cases, housing ventilation is kept by use of fans. For fans to

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work, they need the use of electricity. Electricity is used to propel the fans. When BIM technology is used it makes it very simple to conserve the energy which could have been used in propelling such fans. This is because the main aim of the green BIM technology is to produce houses, which are naturally ventilated. It aims at building houses, which are environmentally friendly. Through such ventilation, it reduces the costs that was to be spent in purchasing the electricity for fans. Thus, costs of housing construction are to cut such costs. The application of green BIM technology in Ireland makes it cheap for the people to construct houses and thus save the money that could be spent in the purchase of electricity. The saved resources can be used in other fields of the economy.

Objectives

The use of green BIM technology in building houses in Ireland is very important, as its objectives are applicable to the building and construction designs

The green BIM technology helps in reducing the constructing costs. The construction costs are reduced in that the ventilation left keeps the spacing in the house. The materials, which could have been used in building such houses, are minimized. The costs of building therefore reduce and the house construction in Ireland becomes cheap. During house construction, it is very important to cut the costs of construction. The use of green BIM technology in house construction makes it very easy to build the houses. The house construction by use of green BIM aims at constructing houses, which are very cheap. The objectives of the green BIM technology are to build house at a very low cost.

The other objective of the green technology is to increase the speed of delivery. This is because the information kept is easily retrieved from the computer. The easy retrieval of building technology information helps in building construction very easy. This is because the information kept in the computer can easily be retrieved. Easy retrieval of the information makes the construction very easy. Fast information retrieval makes the construction of houses in Ireland very fast, as the constructors will retrieve the information very easily.

Another objective of the green BIM technology in Ireland is to link vital information such as vendors for relevant materials, locations and quantities required for house estimation and tendering. Through green BIM technology, the materials to be used are known prior to the construction. Thus, inconvenience during construction is reduced.

Data collection methods

I chose the following data collections methods in regards to the research to be carried on factors that will enhance performance ventilation features that are comfortable, effective and efficient for domestic housing in Ireland.

Carrying out of questionnaires

Questionnaires are written documents that contain questions that relate to the subject matter at hand. These forms are then handed over to different individuals and organisations that might be having information on the research being carried out. These questionnaire involved question on the climatic conditions of Ireland. Distribution of these questionnaires will involve leaving them in agricultural organisations.

This process will also involve visit the already established domestic farmers

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around the area that the housing is to be placed and issuing them with the documents. This process will give chance for the researcher to receive important information that entails effective and conducive environment on building domestic ventilations. The individuals question will be needed to provide information on the types of materials they think are extremely essential and are of high impact in provision of better ventilation for the domestic animals. These materials can range from temperature moderators that increase or in other words regulate the degree of warmth or cold circulating in the building.

Personal observation is another effective method of data collection. Despite the fact that the research will involve almost similar steps like that of questionnaires, in this method, the researcher will take the initiative of participating in activities that involve similar constructions and installation of ventilation equipment in building similar to that of the anticipated one. This gives the researcher a chance to grab first-hand information that will be more accurate and unbiased as compared to all the other methods of data collection.

Interviewing involves questioning of different people who has at one time or severally invested in the idea of making their domestics houses more comfortable for improved production and growth of their domestic animals. This method will entail personally meeting these individuals with the aim of deriving important information from them that helps the researcher in setting up a stable, well planned and properly conditioned building.

Conclusion

Analysis of the data collected has revealed a number of factors that are of high sensitivity in relation to the types of materials used and the skills, techniques and knowledge of the constructors. This field of civil engineering involves the exclusive summary of steps discovered from the research carried on building performance ventilation of domestic housing in Ireland. The first step will involve planning. This entails identification of the nature of the building in relation to the size, its segmentation and stability. The environmental effect of the building to the surrounding environment also should be considered to avoid inconveniencing the surrounding residents. If it has negative impacts on the environment, then materials for compensating the incurred damages or losses should be set aside to prevent inconveniencing others.

A detailed budget of the funds and materials allocated for the purpose of ventilating these buildings should be clearly presented. The skills and experience of the employed constructors should be confirmed with presentation of legally signed documents. This procedure gives the client a complete assurance of the professionalism in fixing of the gadgets which require high handling carefulness and a lot of knowledge in fixing them at their respective areas.

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