

Journal 4

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College: Response Journal 4 The danger posed by global warming, coupled with worldwide concern for imminent resource shortage, is one of the primary issues facing engineers in the contemporary society. This issue has prompted several engineering inventions, which are meant to conserve resources while causing the least possible environmental damage.

Construction of green buildings is one of these significant inventions. The engineering concept stems from understanding the role which buildings play to positively contribute to the environment, energy, economy and overall human welfare. This paper provides insight into the engineering concept of green buildings, by analyzing Lipu, Jamal and Karim's journal article titled "An approach towards sustainable energy performance by green building: a review of current features, benefits and barriers." Just like the title suggests, the article examines how green buildings work towards increasing energy conservation and sustainability. This journal article also outlines characteristics of green buildings, their benefits and the hurdles that engineers encounter when constructing them.

A principal point noted from the article is that global warming and potential depletion of resources is a major concern for engineers. This is especially in the construction industry, since buildings make up the greatest percentage of engineering works. According to Lipu, Jamal and Karim (180) construction of buildings consumes more than one-third of global resources. This includes approximately 40 percent energy and 12 percent freshwater usage. In terms of pollution and contribution to global warming, buildings produce about 40 percent of greenhouse gases and the same proportion of landfill waste (Lipu et al. 181). These figures clearly show that it is not only industries and cars

that contribute to the problem of rising global temperatures and climate change, but buildings as well.

Construction of green buildings and refurbishing old ones to enhance sustainability holds significant potential to save energy, while reducing emission of greenhouse gases. Further, green buildings create a comfortable and healthy indoor setting for building tenants. This is because green buildings provide proper indoor conditions in regard to ventilation, air quality and thermal comfort. By making maximum use of day lighting and natural ventilation, which is supported by many operable windows, green buildings save energy that would otherwise have been used to sustain artificial lighting and air conditioning systems. Further, green buildings make use of renewable construction materials. The energy saving capacity of green buildings can be enhanced if coupled with sustainable landscaping. This sustainability can also be elevated by installation of bioclimatic elements that would help these buildings to not only improve indoor environments, but the microclimate of urban areas as well.

Despite the benefits associated with sustainable buildings, engineers still face numerous challenges in constructing them. For instance, the recyclable materials are not readily available and engineers often lack money to finance green building. There is also a possibility of incurring extra hidden costs, especially if technologies chosen turn out to be incompatible or fail to perform as expected. There are also many regulatory and administrative barriers to green building, since not many administrations have adopted the concept as a mainstream construction approach. These challenges can be overcome by enhancing awareness and sensitizing investors about projected

savings in the long-term. This form of advocacy would also encourage administrative and regulatory bodies to embrace green building and ease bureaucratic process required by engineers to acquire permits. It would also be advisable for engineers to invent green technologies that are compatible with their building designs to save construction costs. Finally, in order to enhance availability of green construction materials, engineers must strive to experiment on diverse combinations of currently available materials.

Work Cited

Lipu, Hossain, Jamal Taskin and Karim Tahia. An Approach towards Sustainable Energy Performance by Green Building: A Review of Current Features, Benefits and Barriers. *International Journal of Renewable and Sustainable Energy*, 2. 4(2013): 180-190.