

Sample argumentative essay on the future of green architecture

[Education](#), [Sustainability](#)



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Introduction

The development of technology created some possible solutions to the global warming such as sustainable energy sources (Jin et al, 2013). In addition, the modern architecture is also contributing to the care of the environment. The government and some organizations are now promoting the sustainable use of materials and designs in buildings and skyscrapers. It is often called the “green architecture” which refers to the evolution of architectural designs which are concerned with the awareness to the environment (Bhattacharya & Singh, 2013). Skyscraper sustainable designs are usually efficient in energy use and it values the factors that could remove the hazards of the environment. Sustainable designs in architecture are also concerned with the use of lesser materials and maintaining a low waste discharge from the operation of the buildings or skyscrapers (Ali 2001).

Buildings usually consume a large amount of energy for its operation and

maintenance. The large energy requirement also means large amount of non-renewable energy sources to produce it such as coal, natural gas and oil (Yeang, 1999). In the United States, buildings consume over two thirds of the whole electricity consumption of any urban areas or cities. Buildings are also responsible for the large waste problem of most of the urban areas (Percio, 2004). The buildings in the United States usually produce 145 million metric tons of construction, demolition and operation waste each year. With the development of the “green architecture”, it should be a necessity in order to reduce the risk and problems of environmental pollution. The objective of this essay is to argue that “green architecture” is a necessity for improving the environment and to promote sustainable progress. This essay opts to promote green architecture by discussing the some of the examples of sustainable skyscraper designs, its benefits and its future trends.

Present Development of Skyscraper Sustainable Designs

The history of green architecture could be recognized and be traced from an architecture magazine in the early 1900s. As the technology of buildings are improved, sustainable designs are now incorporated in buildings such as the effective use of light and use of materials that could not harm the environment. The United States Green Building Council (USGBC) was established in 1993 to promote the green architecture or the sustainable designs by emphasizing its major benefits. One major benefits that the USGBC promotes is that the sustainable skyscraper designs operates at high system performance which are low in operating cost due to the minimal use of energy and materials (Abalos & Herreros, 2003).

There are three main factors for the development of the sustainable skyscraper designs in the United States and other developed countries such as China. First factor is the emerging regulations and government provisions for the use of environment friendly buildings. One of the oldest government regulations is the New York Zoning Law which controls the construction of new buildings in some areas which are environmentally protected by the government. The second factor is the energy crisis. The non-renewable energy sources are decreasing and becoming more expensive which made architecture designers to shift to sustainable designing. Lastly, the main factor for the development of “green architecture” is the rise of consciousness or awareness to the care of environment (Priatman, 2000).

Bank of America Tower

New York City is one of the greenest urban places in the world due to its low consumption of energy per person. The first sustainable skyscrapers are also built in Manhattan to promote the awareness to the environment and to simply reduce their consumption of energy. One of these sustainable skyscrapers is the Bank of America Tower. It was completed in 2009 and considered to be the 4th highest skyscraper in New York and the 6th highest in the United States. It is also considered to be one of the most ecologically friendly buildings in the world due to its environmental features (Foster et al, 2008).

Of the main environmental features of the Bank of America Tower is its insulated glazing in its ceiling and floor designs. This technology could maximize the heat and light transfer within the interior of the building which

could reduce its energy consumption for its lighting system. The building also has the built-in greywater system which collects the rain water and reuses it for its operation. The materials used in the construction of the buildings are composed mainly of recycled materials. It also used low amounts of cement to reduce the amount of carbon dioxide produced in the construction and operation (Foster et al, 2008).

The environmental features of the building would help the company to reduce its energy consumption and waste generation. It could also decrease the use of air conditioning and heating system which are hazardous to the environment since it could produce greenhouse gases. The ice battery system which is operational in the building could create ice at night and release during daytime for air conditioning and cooling. The environmental features of the Bank of America Tower could also help the city itself by removing some of the harmful gases and particles in the atmosphere. The ventilation system of the building acts as a large air filter in the city since the air entering the building is cleaned before exhausted (Foster et al, 2008).

Pearl River Tower Guangzhou

Another sustainable architectural design is the Pearl River Tower in Guangzhou, China. It was completed in 2011 which is used for official functions although part of the building was occupied by the China National Tobacco Corporation. The architectural design of Pearl River Tower also has environmental features. It is claimed to be one of the groundbreaking technological design in the modern times due to its efficient use of natural forces for energy. It promotes the awareness to environmental care and

economic progress by conserving energy. It is also known be the building that does not use any non-renewable energy sources such as coal, oil and natural gas in its operation (Foster et al, 2008).

One of its major environmental features is the use of natural or passive forces for the operation of the building. It has built-in wind turbines in each side to produce energy. The wind turbine which collects the wind energy also protects the building disaster since it allows the air to flow within the building which reduces the stress. The building also has solar panels that collect solar energy which are used to operate the building. The general method of the Pearl River Tower of promoting environmental awareness is its reliance to natural sustainable energy sources and its zero use of non-renewable energy sources. The building could be an example and a model for reducing the energy consumption of the buildings in any urban places (Foster et al, 2008).

Future Trend of Skyscraper Sustainable Designs

Sustainable skyscraper designs are progressing due to the help of increasing awareness for environmental care. Several countries are also including sustainable designs for the construction and the operation of tall buildings. Tall building became favorable nowadays since it could create a denser and efficient urban land use. Tall buildings could result to efficient electrical transfer since it could greatly result to smaller power grids (Ali & Moon, 2007). This is the reason why the government tends to regulate and promote the construction of taller buildings. The progress of the construction of taller buildings could be more developed with the use of the technological advancements such as the environmental features used in the Bank of

America Tower and the Pearl River Tower in Guangzhou China.

The two sustainable skyscraper designs are also being improved in the modern times. Environmental features will also be added to increase the efficiency of the building in reducing its energy consumption and reducing its waste generation. There are also towers being constructed which applied the technology of sustainable designs. Government and private organizations are also forcing the architects to promote sustainable designs in their future works. In the future, urban cities could have more sustainable or green buildings which could result to cleaner environment which consume lesser energy (Ali & Moon, 2007).

Conclusion

Green architecture is concerned with the minimal use of energy and reduction in the waste generation of designed and constructed buildings. Some of these green architectural designs are the Bank of America Tower and Pearl River Tower in Guangzhou China. The environmental features of the building could help the company itself as well as the community in promoting cleaner environment. With the development of new technologies, green architecture should be a necessity in order to create cleaner environment.

References:

- Abalos, I., & Herreros, J. (2003). *Tower and Office: From Modernist Theory to Contemporary Practice*. Cambridge, MA: MIT Press.
- Ali, M. (2001). *Art of the Skyscraper: The Genius of Fazlur Khan*. New York: Rizzoli.

Ali, M., & Moon, K. (2007). Structural developments in tall buildings: current trend and future prospects. *Architectural Science Review*, 50(3): 205-223

Bhattacharya, S. & Singh, S. (2013). Sustainability Index Measurement of Energy Efficient Skyscrapers: Present Indian Perspective. *International Journal of Modern Engineering Research*, 3(2): 747-751

Foster, N., Luff, S., Visco, D. (2008). Green Skyscrapers: What is being built and why?. Retrieved from https://courses.cit.cornell.edu/crp384/2008reports/18Green_Skyscrapers.pdf.

Jin, X., Zhang, G., Zuo, J., Lindsay, S. (2013). Sustainable high-rise design trends: Dubai's Strategy. *Civil Engineering and Architecture*, 1(2): 33-41.

Percio, S. (2004). The Skyscraper, Green Design, & the LEED Green Building Rating System: The Creation of Uniform Sustainable Standards for the 21st Century or the Perpetuation of an Architectural Fiction?. *Law Student Publications*.

Priatman, J. (2000). *Ecosustainable High-rise: The Environmentally Conscious Architecture of Skyscraper*. John Wiley & Sons, Inc.

Yeang, K. (1999). *The Green Skyscraper. The Basis for Designing Sustainable Intensive Buildings*. Prestel Verlag. Munich.