WHAT IS A "GREEN" **BUILDING?**

Green buildings come in all shapes, sizes, and geographic locations. Although there is no set definition of what constitutes a green building, there are some common strategies used in most:

Reduce water usage

- Lower energy consumption
- Utilize alternative forms of energy and new technologies
- Install better insulation
- Take advantage of daylighting and natural ventilation
- Develop the natural site with less destruction
- Provide sustainable transportation options

"Of 121 new buildings certified through 2006, the GBC found that 53 percent did not qualify for the Energy Star label and 15 percent scored below 30 in that program, meaning they used more energy per square foot than at least 70 percent of comparable buildings in the nation." -Mireya Navarro (NY Times)

> "The amount of points earned for historic preservation of a building are the same amount of points earned for the installation of a bike rack." - Steve Mouzon (Archdaily)



LEED RATING SYSTEM

The Leadership in Energy and Environmental Design rating system was developed as a way to classify green buildings. LEED offers designers a chance to place a numerical value on how efficient their building will be, and provides a way to rank and compare all green buildings with the certification.



- 1. Integrative Process **2.** Location and Transportation 3. Materials and Resources 4. Water Efficiency **5.** Energy and Atmosphere 6. Sustainable Sites 7. Indoor Environmental Quality 8. Innovation

- 9. Regional Priority

FAILURES OF LEED

Buildings with high LEED credit perform worse than projected Buildings often perform worse than older buildings or buildings without LEED certification Designers gain points that are the easiest or cheapest to achieve LEED certification leads to the "greenwashing" of buildings System does not account for where the building is or who it is for The process of certification is long, complicated, and expensive



INTRODUCTION

Green building design has made a huge wave through architectural practice around the world in recent years. Architects are more conscious of the impact that construction has on the planet, and many are adopting strategies to help lower the negative impacts of building. As a guide to better architecture, the Leadership in Energy and Environmental Design (LEED) program was started and allows designers to earn points toward a sustainability goal. Unfortunately, the LEED system has quite a few failures. Many of these "green" buildings perform worse than comparable buildings without the LEED certification label. In order to truly reduce the negative impact that the built environment has on the planet, people must be educated about the true meaning of sustainability and address all social, ecological, and economic aspects of a project.

A SUSTAINABLE DECISION MAKING PROCESS

- **1.** Research the community and its needs
- 2. Determine if a new building is necessary or if an existing building can be redeveloped
- **3.** Develop the site in a positive way
- 4. Design flexible spaces to adapt to changes in use
- **5.** Carefully consider life-cycle costs of materials
- 6. Determine if sustainable technologies are necessary
- 7. Educate the users to ensure future sustainability

CONCLUSION

As the concept of sustainability is discussed more frequently and with a greater urgency for action, architects should be setting standards and leading the way to a more sustainable world. Although green building design and the utilization of LEED rating standards have made a large stride towards a more sustainable world, green buildings are still not as sustainable as they could be. Building sustainably requires that structures are more modest, and are only built if absolutely necessary. Designs should allow humans to inhabit the space for many years and for many uses, and the development of the built environment needs to be done in a way that allows the natural environment to continue to thrive. Architects and all other citizens of the world must educate themselves about true sustainability in order to improve our world, or even allow it to continue in the fragile state it is in today.

Potential points offered in nine main categories:



SUSTAINABILITY IN ARCHITECTURE

Social Sustainability:

* Interaction between building and community of people

* Architecture designed for many generations, satisfying the needs of a large group of people

Ecological Sustainability:

* Protection of the natural environment when creating man-made structures.

* Consumption of natural resources in a smart and minimal way

Economic Sustainability:

* Viability of implementing sustainable strategies in a building.

- * Investigate initial costs of materials, while taking into account the hidden costs of production, and the overall savings or losses throughout the product's lifetime.
- * The ethics of architects, construction companies and manufacturers also falls into this category.





SUSTAINABILITY: DEFINED

Sustainability should always be addressed with three main concepts in mind: Social, Ecological, and Economic. Each concept overlaps with the other two in multiple ways, and in order to gain knowledge of true sustainability, all areas must be covered.

Social Sustainability:

* Generally refers to the consequences of process to the social fabric of a community (culture, justice, decision-making opportunities, and equity).

Ecological Sustainability:

* Refers to the health of the ecosystems that support both human and non-human life.

Economic Sustainability:

* Focusses on the economic viability of a process, project, enterprise, or community

"Construction accounts for around half of all carbon emissions, and includes the manufacture, transport, construction, and demolition of materials." - Landry 2011

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