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A Study on planting sustainable design for reversing of Environmental issues & Challenges

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Abstract

Today the issue of environmental pollution has become a burning problem globally. To overcome this, there is a need for a planting sustainable design. Sustainable design aims to decrease the negative influence on the environment, health and comfort of residents. The main goal of sustainable development is to adopt the habit of renewable sources, shrink waste and create a better and more fruitful environment So that there is no negative impact on the environment. If people make products, equipment, furniture, homes, factories, cities with more logically. Then they don't have to worry about waste, pollution, or scarcity. Superior design makes the product rich and endless use and fun. Decisions related to design are everywhere every day, affecting sustainable development and preparing future generations. Our future is shaped. The term design used here refers to products, services and transactions that are appropriate for creating business and innovative strategies. All of this proves its durability. Sustainability can be considered a feature of sustainability. In other words, sustainable development can remain into the future.

Key Words:-Sustainable, design, Environment, generation

1. Introduction

Today the issue of environmental pollution has become a burning problem globally. To overcome this, there is a need for a planting sustainable design. Sustainable design aims to decrease the negative influence on the environment, health and comfort of residents. The main goal of sustainable development is to adopt the habit of renewable sources, shrink waste and create a better and more fruitful environment So that there is no negative impact on the environment. Also today people need to connect to the environment; there is a need to create love for the environment. The responsibility to save the environment is also a personal responsibility. If there is environment then there is life. Trees - plants, animals, humans all need the environment to survive. Air to take breath, water to drink, foods to eat and shelter to live is the basic requirement of all living creatures. All of these basic requirements depend on the environment. Even today, if the problem of environmental pollution is not solved properly, then all the creatures will yearn to fulfil their basic needs. There will be outbreaks on all four sides. Therefore it is necessary that from today onwards everyone should face environmental challenges by adopting sustainable design. Not only at the individual level but also at the national level and the universal level, sustainable Design Plant should be set up so that environmental issues and challenges can be faced. There is no human contamination issue, there is a design issue. If people make products, equipment, furniture, homes, factories, cities with more logically. Then they don't have to worry about waste, pollution, or scarcity. Superior design makes the product rich and endless use and fun. Decisions related to design are everywhere every day, affecting sustainable development and preparing future generations. Durability and design are combined seamlessly. In short, our future is shaped. The term design used here refers to products, services and transactions that are appropriate for creating business and innovative strategies. All of this proves its durability. Sustainable design aims to produce reusable and reusable products in accordance with standards and guidelines. For example, a room with a large window should have a neutral interior space to maximize the absorption of sunlight to help increase ambient light and increase comfort, while reducing the need for light around the room. Sustainability can be considered a feature of sustainability. In other words, sustainable development can remain into the future.

2. Reasons for adopting sustainable designs

Adverse effects of Leftover: Designers should be liable for creating elections about natural resources, causing Leftover and causing irreparable damage to ecosystems. Current experience shows that there is no safe way to dispose of Leftover. Various settlements have a negative impact on the environment, public novelty and the local economy. The landfill has infected drinking water. Burning flammable substances can poison the air, soil and water. Most water purification systems change the local environment. Post-production efforts to control or manage leftover have not eliminated the impact on the environment. The toxic elements of everyday goods can seriously endanger health and exacerbate waste problems (such as air fresheners,

nail polish, cleaners and other products) when burned or buried, toxins pose a grave danger to public health and the environment. The only way to escape wasting damage to the environment is to prevent it from generating wastes. Checking pollution means shifting the method actions are carried out and eradicating the origin cause of problems. This does not mean cutting, but in a different way. *Industrial designer Victor P. Papanek said: "When we plan to design and compromise things, we do not pay enough attention to design."* A good waste avoidance approach requires that all items entering the factory should be recycled by biodegradation or recyclable in the environment. This means increasingly dependent on natural materials or environmentally friendly products. Like: Reduce waste and use non-toxic products, two types of compost or anaerobic digestion of degradable waste, Gather appropriate content for site reuse or site reuse. Occupy less resources means reducing waste, thereby minimizing the impact on the environment.

Adverse effect of Weather Change: The noticeable and surprising guide to the ecologically friendly sustainable project can be responsible for global warming and climate change. Over the past three decades, humanity's importance of taking action against climate change has increased. Climate change can be blamed for some of the failures and poor design, regardless of the environment, is one of them. Although many steps have been taken towards sustainable development, most products, industries and buildings still consume large quantities of waste and cause a lot of pollution.

Adverse Effect of Biodiversity: There has been lost of Biodiversity due to improper sustainable design. Undesirable environmental and blank designs impact biodiversity in all regions. Thousands of animals follow seams in the forest due to improperly constructed highways. Improperly designed hydrothermal dams indirectly influence the mating cycle and the number of local fish.

Adverse Effect of Unsustainable venture: While this may seem like a common misfortune in favor of increased investment returns in response to low incomes, difficulties may arise when the resource limit is confused, but it can be broken exists. To eliminate the extra pressure on companies you need to reduce the pressure on them and not increase resources more effectively than needed. There should be not any pressure on environment to fulfill the unnecessary requirements.

Adverse Effect in the form of Diminishing returns: The technologies discussed in the Industrial Environment and Lifecycle Assessment illustrates the following principles: The "S" curve occurs in the life cycle, and full development occurs in all directions in the life of any low-income system. Reaching the natural limit will result in a reduction in income. The general business practice is to show the potential for a reduction in income from all aspects of the job, the possibility of a rapid decline, and the possibility of finding new opportunities elsewhere and Gone Controversy.

3. Standards of Sustainable design

- "Low-impact materials: choose non-toxic, sustainably produced or recycled materials which require little energy to process
- Energy efficiency: use manufacturing processes and produce products which require less energy
- Emotionally durable design: reducing consumption and waste of resources by increasing the durability of relationships between people and products, through design
- Design for reuse and recycling: Products, processes, and systems should be designed for performance in a commercial 'afterlife'.
- Targeted durability, not immortality, should be a design goal.
- Material diversity in multicomponent products should be minimized to promote disassembly and value retention.
- Design impact measures for total carbon footprint and life-cycle assessment for any resource used are increasingly required and available. Many are complex, but some give quick and accurate whole-earth estimates of impacts. One measure estimates any spending as consuming an average economic share of global energy use of 8,000 BTU (8,400 kJ) per dollar and producing CO₂ at the average rate of 0.57 kg of CO₂ per dollar (1995 dollars US) from DOE figures.
- Sustainable design standards and project design guides are also increasingly available and are vigorously being developed by a wide array of private organizations and individuals. There is also a large body of new methods emerging from the rapid development of what has become known as 'sustainability science' promoted by a wide variety of educational and governmental institutions.
- Biomimicry: redesigning industrial systems on biological lines ... enabling the constant reuse of materials in continuous closed cycles...
- Service substitution: shifting the mode of consumption from personal ownership of products to provision of services which provide similar functions, e.g., from a private automobile to a carsharing service. Such a system promotes minimal resource use per unit of consumption (e.g., per trip driven).
- Renewable resource: materials should come from nearby (local or bioregional), sustainably managed renewable sources that can be composted when their usefulness has been exhausted.

4. Facets of ecologically sustainable designs

Sensitively sturdy design: As a strategic approach, "emotionally durable design provides a useful language to describe the contemporary relevance of designing responsible, well made; tactile products which the user can get to know and assign value to in the long-term. Emotionally durable design is a call for professionals and students alike to priorities the relationships between design and its users, as a way of developing more sustainable attitudes to, and in, design things. Emotionally durable design reduces the consumption and waste of natural resources by increasing the resilience of relationships established between consumers and products. The process of consumption is, and has always been, motivated by complex emotional drivers, and is about far more than just the mindless purchasing of newer and shinier things; it is a journey towards the ideal or desired self that through cyclical loops of desire and disappointment becomes a seemingly endless process of serial destruction".

Chapman believes that"sensitive stability" can be achieved by considering five factors:

Original story: how users share their story with the product.

Strong knowledge: the way in which a product is considered an independent product and can have its own independent will.

Discomfort: can the user experience be linked in a sensitive way to the product?

Literature: the production stimulates not only physical relationships, but also interactions and *attachments*.

Face: how the age and characteristics of a product evolve over time and use.

Gorgeousness sustainable design: 'Small and large buildings are beginning to successfully incorporate principles of sustainability into award-winning designs. Examples include One Central Park and the Science Faculty building, UTS. The popular Living Building Challenge has incorporated beauty as one of its petals in building design. Sustainable products and processes are required to be beautiful because it allows for emotional durability. Many people also argue that basophilic is innately beautiful. Which is why building architecture is designed such that people feel close to nature and is often surrounded by well-kept lawns – a design that is both 'beautiful' and encourages the inculcation of nature in our daily lives or utilizes daylight design into the system – reducing lighting loads while also fulfilling our need for being close to that which is outdoors.

Commercial Facets: Commerce is another aspect of environmental design and is necessary for most planning decisions. Of course, most people will take into account the cost of the project before considering impact on the environment. So, there are more and more ideas about introducing green designs and suggestions, and the focus is on the economic benefits granted to us. To achieve the most ambitious goals of the ecosystem design movement, architects, engineers, and designers need to research and communicate the benefits and economic viability of sustainable design practices. The stringent standards applied to the development of technical construction solutions should focus on developing skills to express potential.

Ideals of Valuation: Many standards and rating systems have been developed to achieve stability in popularity. Most rating systems are about buildings and electricity, and some include products. Most rating systems are based on both design and construction or fabrication. Leadership in energy and environmental design, Create a living challenge, Family Power Expression Rating, water efficiency marker, Environmental Impact Assessment Methodology, Initiative for environmentally friendly construction, EPA water sense, Energy star, Forest Stewardship Council, Integrated environmental assessment system, Inactive house. When designing environmental sustainability, attention should be paid to suitable entities. Different standards often weigh things in different entities and can have a big impact on the results of this scheme. Other significant facet when using criteria and viewing data is a first understanding. A weakly designed baseline with major enhancements often has a high efficiency ratio, while an intellectual baseline needs little enhancements from the start and shows little change. Therefore, all data equations must be at the same level and can also be derived from the values of several units.

Life cycle and product life assessment: Life cycle assessment is a widespread assessment of the various stages of abstraction, transportation, managing, purifying, production, maintenance, usage, removal, reprocess and recycling. If it helps to maintain a point of view, it is a long-term sustainable design practice. Products such as aluminum can be reused multiple times, but energy consumption is too high to decompose and refine, which is unfavorable. Use LCA to create information like this, and then consider the design.

5. Appliances of various Sustainable Designs

Sustainable Engineering Design: Sustainable engineering refers to a design or operating system that uses power and resources in a sustainable way, the speed of which does not affect the natural environment or the ability of future generations to meet their needs. Communal technical priorities contain water supply, production, sewerage system, pollution treatment, waste residue, restoration of natural habitat, etc.

Durable interior design: One of the basic rules of the interior design industry is to provide a healthy and beautiful environment to the occupants of the room. If you focus on the sustainable development of the industry, the interior design may include research on environmentally friendly materials, functionality, accessibility and aesthetics. Sustainable interior design can be incorporated into various technologies: water saving, energy saves, use of non-toxic, durable or recycled materials, manufacturing processes and production of energy saving products, and production of sustainable and functional products. Sustainable design aims to produce reusable and reusable products in accordance with standards and guidelines. For example, a room with a large window should have a neutral interior space to maximize the absorption of sunlight to help increase ambient light and increase comfort, while reducing the need for light around the room.

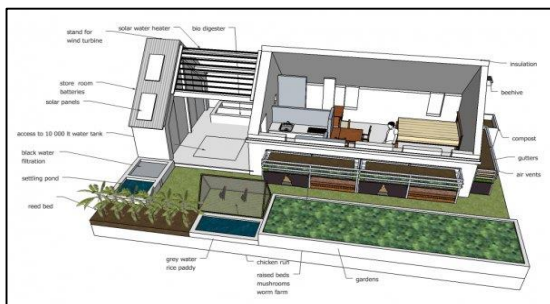
Sustainable Green Design: Ecological projects are often intertwined with ecological sustainability projects. Discussion in this regard is very popular. Some people believe that green design is more important than truly sustainable design, which is seen as a global agreement. Green design focuses on short term goals. Although this is a valuable goal, it can have a greater impact on the use of sustainable design. This is mainly due to the fact that the ecological sustainability project is often used in parallel with the economic and social stability project. After all, unintended environmental design is generally relevant to architecture as well, but sustainable design is seen in a broader context.

Sustainable design of gardens and Countryside: Sustainable countryside design is concerned with the planning and design of the space outdoor space for energy conservation and environmental beautification. Design strategies include the use of local materials to protect trees from sunlight or wind, composting and chipping on site, not only reducing the amount of green waste, but also increasing biomass and carbon. Some designers and gardeners use drought-resistant plants to prevent irrigation in dry areas and elsewhere. In a rainforest garden, water can be collected from the roof of the house to supplement groundwater, and instead of rain, surface runoff can increase the chances of flooding. Parks and landscapes will be wild to promote biodiversity. Indigenous animals can be propagated in many ways: from pollen to pollen and pollen from immortal organisms, or from ponds or ecosystems to dendritic habitats or aquatic ecosystems. The use of pesticides, especially persistent pesticides, should be avoided to avoid harming wildlife. Due to the presence of organic matter, soil fertility can be consistently managed using multiple layers of plants and multiple vegetation. Causes earth and mycorrhiza; Nitrogen fixing plants instead of artificial fertilizers using nitrogen; Sustainable marine wind extract for micro nutrients replacement. Sustainable and ornamental landscapes and gardens, growing in amazing locations can produce food, wood and craft carpets.

Sustainable Agriculture: Agriculture serves three main goals: Environmental cleanliness, Economic benefits, Social and economic equality. Different religious philosophies, doctrines and practices have contributed to this goal. People from all walks of life, from farmers to consumers, contribute to this vision. Despite human diversity and perspectives, the following themes generally define sustainable agriculture. Although there have been tough discussions between the agriculture sector and other sectors - can existing pesticide agreements and land protection methods properly protect eels and wildlife? If it is sustainable, it will raise doubts. If land reform allows the use of fewer pesticides for effective farming, it will reduce environmental damage.

Power Segment: “Sustainable technology in the energy sector is based on utilizing renewable sources of energy such as solar, wind, hydro, bioenergy, geothermal, and hydrogen. Wind energy is the world's fastest growing energy source; it has been in use for centuries in Europe and more recently in the United States and other nations. Wind energy is captured through the use of wind turbines that generate and transfer electricity for utilities, homeowners and remote villages. Solar power can be harnessed through photovoltaics, concentrating solar, or hot water and is also a rapidly growing energy source. Advancements in the technology and modifications to photovoltaics cells provide a more in depth untouched method for creating and producing solar power. Researchers have found a potential way to use the photogalvanic effect to transform sunlight into electric energy. The availability, potential, and feasibility of primary renewable energy resources must be analyzed early in the planning process as part of a comprehensive energy plan. The plan must justify energy demand and supply and assess the actual costs and benefits to the local, regional, and global environments. Responsible energy use is fundamental to sustainable development and a sustainable future. Energy management must balance justifiable energy demand with appropriate energy supply. The process couples energy awareness, energy conservation, and energy efficiency with the use of primary renewable energy resources.

Sustainable Construction: “Sustainable architecture is the design of sustainable buildings. Sustainable architecture attempts to reduce the collective environmental impacts during the production of building components, during the construction process, as well as during the lifecycle of the building (heating, electricity use, carpet cleaning etc.) This design practice emphasizes efficiency of heating and cooling systems; alternative energy sources such as solar hot water, appropriate building siting, reused or recycled building materials; on-site power generation - solar technology, ground source heat pumps, wind power; rainwater harvesting for gardening, washing and aquifer recharge; and on-site waste management such as green roofs that filter and control storm water runoff. This requires close cooperation of the design team, the architects, the engineers, and the client at all project stages, from site selection, scheme formation, material selection and procurement, to project implementation.”¹



https://en.wikipedia.org/wiki/Sustainable_design#/media/File:Sustainable.jpg, Retrieved on June 18, 2020

Sustainable town design: Sustainable urban design means low carbon footprint, good air quality, more sustainable energy reliance and planning of cities with healthy relationships with the environment. Sustainable urban planning embraces many regulations, including architecture, engineering, biology, environmental science, materials science, law, transportation, technology, economic development, accounting and finance, and government. This type of planning develops advanced and practical methods for land use and its impact on natural resources. New sustainable explanations to urban planning problems may include green buildings and structures, mixed use development, walkways, greenways and open spaces, alternative energy sources such as solar and wind power, and transportation options. Creating a conducive urban environment Community building and planning is a major challenge. The challenge is based on a comprehensive treatment policy for a variety of needs: society, architecture, industry, economics, hygiene and sanitation. Social needs build networks and build buildings to create favorable conditions for their better use. When creating an architectural art solution, consider the local spatial appearance of the surrounding landscape area. Economic needs include rational use of the region's territory. Health and sanitation needs are more interested in creating sustainable urban areas.

Sustainable Technologies: Technology is embedded in our society. Without it, society would have collapsed by then. Also, technological changes can be easier to accomplish than lifestyle changes, and we have to face challenges to make lifestyle changes. The creation of sustainable technology depends on the flow of new information. Durable technologies reduce energy waste costs and help store water. This system has undergone more fundamental changes without going into a more sustainable design. About our relationship with the environment - Sustaining it requires constant updating and development to ensure that the environment can be achieved, as the concept of sustainability is constantly changing. In Sustainable Technological comfort users have a lot of control over their comfort and functions. Split lighting and lighting elements allow people to change their lighting needs without worrying about affecting others, resulting in weight loss. Sustainable technology consumes less energy, uses less limited resources, and does not absorb natural resources. There is a lot of interaction between appropriate technologies, especially in developing countries that need to emphasize technologies and capabilities related to the environment the most appropriate technology may not be the most sustainable. There are other many sustainable designs in other sectors like:-In water segment, development area, in manufacturing area, in domestic house hold things and machinery items etc.

Conclusion

After analyzing all the above data, it can be concluded that sustainable design is required in every sphere of life to overcome environmental issues and challenges. Because today we are seeing that the adverse effects of environmental pollution are shocking. We are all feeling adverse effects of climate change, adverse effects of waste materials, adverse effects like lack of biodiversity etc. The environment is life itself and if a return is received at the high cost of the environment it will be worthwhile as a low return at a higher cost. Even today, if the adverse effects on the environment are not taken into consideration, then the entire species will be in danger. Therefore, there is a need to have a design in every field of life today. The research paper explains how if the sustainable design is adopted in the fields of energy, water, construction, manufacturing, technology, green gardens, etc., then the adverse effects on the environment can be greatly reduced and the current need and development of the generation as well as the basic needs and luxury needs of the coming generations can be met. A harmony can be established between them. Environmental issues and challenges can be tackled by adopting sustainable designs in our routine life and in every sphere of life. Therefore, there is a need to have sustainable designs in every sphere of human life like: Industries, Factories, Corporates, Private and Government Departments, Homes etc. Having a sustainable design will reduce the negative impact on the environment, reduce energy consumption and get good output. And there will be no pressure on the environment so that the resources will be safe for future generations as well as the comforts and needs of today's generation. Hence, there is need to adopt sustainable design.

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