

How to make our building to be green thesis proposal examples

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It is estimated that 50% of the world's population reside in cities and urban settings. The number is expected to rise to 60% in the next few decades according to UN Habitat. The surging urban population presents a challenge and an opportunity for the development of green design and sustainable cities. Cities comprise of 60% of all energy usage, 60% of total water consumption, and 70% of all greenhouse gases production. The exponential trending of urban population together with contemporaneous standards of living implies that the demand for essential goods and services will rise. These include water, food, modes of transport such as cars and planes, housing materials, wastes from these structures and materials among others. A report by the World Resource Institute indicates an increase of up to 300% in material use as the world population and economic activity surges over the next 50 years. Raw materials supplies are gradually getting exhausted and expensive, landfill sites are filling up leading to increased disposal fees and rendering waste management efforts expensive. The complex systemic and multi-scalar scenario of cities provides massive potential for a broad range of potential interactions with natural systems. Diminishing returns of resources is an indication of reaching natural limits. The diminishing returns in any direction offer a diminishing opportunity and diminishing challenge. The potential of accelerating decline is a diminishing challenge while the signal to seek alternative options is an opportunity. Urban strategic planning is central to the sustainability debate, and serves as a platform for development of new green designs and concepts, waste management, socio-cultural aspects, infrastructural developments and mobility. It is apparent that all these features should be integrated in the

design strategy of a green city with principal focus on sustainable development, energy, transport, material recycling, health, and preservation of natural and cultural habitats, psychology of interaction, urban landscape, biodiversity, and quality of life. All these aspects must be sufficiently integrated and harmonized with 3 P's; People in the sense of population growth and quality of life, Planet – ecology, and Profit in form of economic prosperity.

This paper seeks a solution through innovative designs and engineering processes that will contribute to the process to the process of redefining the quality of life in urban settings. The solution should harmonize with the 3 P's that is people through population growth and improved quality of life, improved ecology, and economic prosperity. While there exist an upward surge in population growth, resources necessary to sustain this population are declining due to existing global industrial systems. This paper integrates issues that spread across the domain of green city design, models of mobility and infrastructure to reduce greenhouse gases, noise pollution, adaptability and flexibility of buildings to changing needs, and building systems that extend their lifecycle and recover materials for re-use, produce green products and material stewardships. This can be achieved through design considerations that seek to minimize waste substances instead of controlling them. In this paper, I am going to explore solutions in three case studies that seek to create a green homes and environment.

About 80 million tonnes of waste are generated yearly in UK. It is estimated that between 1992 and 2008, each person in England generated an average of 1.35 pounds of waste every day. Experience has shown that there is no

guaranteed way of waste disposal and management. All forms of disposal impact on the environment, public health and land in one way or another. Landfills contaminate land and rivers leading to unsafe drinking water, garbage burned in incinerators pollute air, soil and water, water treatment systems change the ecology of the environment and so forth. Attempts to control after they are produced lack the capability to control environmental impacts.

The toxic components derived from household products cause serious challenges and aggravate health problems. In the US, for instance, about eight pounds of toxic materials containing heavy metals such as lead, cadmium and mercury and other organic compounds found in pesticides and home consumer products such as nail polish, sprays and cleaning materials are derived from a ton of wastes. Burning of such wastes poses serious health threats to public and environment. Likewise, tonnes of exhaust gases and other green house gases are emitted on our roads every day, especially from motorists and industrial plants located in urban settings.

The only viable way to control waste and green gas emission into the environment is through prevention methods and strategies. Prevention controls alter the way activities are conducted and eliminate the source of the problem. It does not mean doing away with the processes that generate wastes, but doing differently to minimize its production.

Prevention strategies and controls are only achievable through design management elements. If green buildings design considerations are inculcated in the buildings of green cities, building materials, energy sources and water would be efficiently utilized leading to decreased waste materials,

recycling potentials and economic viability.

Design and building procedures should aim towards creating high impact on green buildings and its sustainability on the people and the environment.

Building codes and standards should be tailored around resource utilization and sustainability. One solution adopted by a local authority for creating green cities is through inculcation of energy saving techniques into the building process and utilization of renewable energy sources. Energy requirements of commercial and domestic consumers are increasing daily as a result of increased demand for production. As industries and home users demand more energy, resources for production of such energy are running out rapidly. Non-renewable source of energy such as coal, nuclear and hydro are increasingly becoming limited due to exhaustion, climatic changes and pollution. It is apparent that most urban buildings are short of energy conservation techniques and systems and their energy appetite keeps on surging. The authority found that a viable solution to the problem is the integration of energy conservation techniques in the building code. Power grid distribution companies made it mandatory for every new consumer to install energy conservation systems in their buildings before they are connected to the main power grid. Such an initiative save the consumer and the country numerous costs associated with power generation and distribution as consumption levels will be manageable and predictable.

In supplementing non-renewable power, governments should make it mandatory to install solar panel electricity systems in every building in urban areas. When installed, solar panels can last for years without upgrading, generating electricity during sunny and cloudy days used to run household

appliances and lighting. This eases the demand and dependence on national power grids, subsequently leading to conservation of environment, improving people's quality of life and offering economic sustainability. Such a solution can be crafted through legislation that makes it mandatory for designers and architectural consultants to integrate efficient energy management systems in their city plans. This initiative if integrated into the laws of the city will require no marketing strategy but only leadership goodwill.

This solution is founded on efficient waste disposal and management. Hi-Plast Ltd is a company involved in the recycling of wastes in informal settings for long term and extensive solution to wastes. In urban setting, especially in informal settlements waste materials such as plastics are unavoidable due to the low quality of living. Poor and slum dwellers cannot afford environmentally friendly packaging materials and the use of plastics is common. However, disposal mechanisms are inefficient and as a result, plastic pollution is common. Hi-Plast integrated the local shareholders such as Community Based Organizations and NGO's in plastic collection, sorting and recycling. The media are also integrated as a public awareness and education platform besides mobilization of the rest of the stakeholders. The company has established regional plastic collection and drop-off points in local neighbourhoods. Plastics are collected in centralized locations after which they are transported to a processing plant. Clean and unclean plastics are sorted out and analyzed according to the content of chemicals it contains. Classification will result to two groups of plastics, those that can be recycled to usable containers and those that can be recycled to building

materials. Building materials such as boards, plastic poles, fencing materials and other variety of products are distributed back to the community. The solution will create thousands of jobs to individuals living in the neighbourhood as well as offer them a green environment and houses. Building materials are expensive and out of reach for most informal settlement dwellers. Materials derived from recycled waste are cheap and durable and when integrated with renewable energy sources such as solar energy, a green city is no longer a dream but rather attainable.

Green technology is one of the inspirational methods of ensuring sustainability and environmental conservation in urban settings. With green technology, building designs are significantly altered to reflect on the theme of environmental conservation. The location, orientation and landscaping of a building affect local ecosystems, transportation and energy utilization. A Green City design should be able to minimize energy use and attain favourable results for humans and environment. A flagship “ Make it Green” project intends to increase vegetation cover around buildings by 20% to neutralize pollution and create a fresh environment. This solution aims at introducing vegetative cover on top of building, along pathways, in parking lots and even inside residential, on the corridors and other appropriate locations. The design of Green City buildings allows for utilization of natural light by upto 50%, thus reducing the need for electric energy and at the same time making it favourable for plants to thrive even inside the building. The site of the sustainable building captures controls and treat storm and used water inside and outside the building and are used to irrigate the vegetation around it. Thus locals can opt to plant flower plants or vegetable

on their city residential since the design accommodates for their survival.

The project promotes utilization of resources, economic sustainability and improvement of ecosystem.

Such a design has impacts on, marketing, finance, legal, operation, strategy, and Leadership. Leadership goodwill is required from the ruling elite to implement rules and regulations that make it mandatory to increase vegetative cover in cities buildings and nearby locations. Marketing of such a project can be achieved through media campaigns which translate into financial obligations. However, the solution provides substantial support to the 3P's. It improves the quality of life of city residents, conserves ecology and derives economic value. City residents can produce their own food by dedicating a small portion of their lawns to food production, thereby, reducing dependence on external suppliers.

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