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Green Campus Development

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Abstract

Colleges, as knowledge institutions, play an important and strategic role on maximizing the social and economic benefits of new ideas. This paper aims to analyze the main sustainable practices of a Green Campus and subsequently points out the guidelines to implement a sustainable environmental management in the Sharad Institute of Technology Polytechnic, Yadrav, India, involving the Campus infrastructure. The Institute of Sharad Polytechnic has been developing sustainability practices to make it an example of Green Campus in India.

Green campus initiatives are becoming integral part of modern day's. However, their management remains slow, cumbersome and limited scope process. Review of related literature suggests that the effective and efficient management of these initiatives require incorporation of project management (PM) principles and thus the need to establish a framework to manage green campus initiatives as projects. Hence the existence of sub-processes likes initiation, continuous coordination, control and ending of green projects.

Keywords: *Green Campus Development, Green projects, Photovoltaic (PV) technology*

INTRODUCTION

Green campus can be defined as a program that integrates environmental management and protection into tertiary institutions. Impacts of climate change are increasing and so is the seriousness of the green initiatives. Review also indicates that there is a need for an effective and efficient green campus management system and establish a need to look at these initiatives as projects and to create a conducive environment for green campus projects. The concept of sustainable development is rooted in thought-oriented thinking to help understand our environment with all its complex and serious problems that we created so that we are able to overcome them. In his thinking in creating sustainable development, it needs a lot of changes in the concept of thinking, especially what must be applied is the concept of returning to nature.

Understanding the term Eco Campus or green campus in the context of environmental preservation is not just a campus environment filled with green trees or a campus filled with green paint, or because the campus's alma mater jacket is green, further than that the meaning contained in the eco campus is the extent to which campus residents can utilize the resources available in the campus environment effectively and efficiently, for example in the use of paper, writing stationery, the use of electricity, water, land, waste management and other.

Green can be interpreted as green and campus can be interpreted as a campus or educational location. If literally, the green campus can be interpreted as a green campus. Green is not the building but the environment. Green campus is a concept of a fusion of the environment with the world of campus Management, and other.

In addition to being learning centres, college and university campuses are self-contained communities that are supported by vast systems of institutional and operational functions. Thus we are developing our SIT Polytechnic college campus as green campus. A Green Campus is a place where environmental friendly practices and education combine to promote sustainable and eco-friendly practices in the campus. The green campus concept offers an institution the opportunity to take the lead in redefining its environmental culture and developing new paradigms by creating sustainable solutions to environmental, social and economic needs of the mankind. Greening the campus is all about sweeping away waste Fu inefficiencies and using

conventional sources of energies for its daily power needs, correct disposal handling, purchase of environment friendly supplies and effective recycling program.

Institute has to work out the time bound strategies to implement green campus initiatives. These strategies need to being corporate into the institutional planning and budgeting processes with the aim of developing a clean and green campus. Project includes implementation of solar panels, producing fertilizers from urine, bio-gas plant, Solid waste management.

Implementation of Green Campus

Green Energy: Implementation Of Solar Panels Solar panel system: We made project on install the solar power plant in Sharad institute technology polytechnic yadrav. Because of the SIT college consume monthly 1700 units energy approximately so we think install the solar plant for college is cost Efficient and eco friendly system for produce energy. We estimated the cost of project and all requirements of all aspects for project.50kw solar plant is required for college it is produce 210 unit produce daily and 75600 units generated annually approximately. For install 50 KW solar plant is required 91 solar panel and 4000sq ft shadow free area. We selected type of plant is roof top on grid system it is save 93% electricity bill.50kw solar system cost is approx. 22 lakh with installation. Solar system is used up to 25 years with no maintenance so it is efficient for college.

Working

Solar power is harnessed using Solar Photovoltaic (PV) technology that converts sunlight (Solar radiation) into electricity by using semiconductors. When the sun hits the semiconductor within the PV cell, electrons are freed and bus bars collect the running electrons which results in electric current. When we place Solar panels connected in a calculated manner in the sunlight, they start producing current and voltage in the form of Direct current (DC) but in most of the countries in the world appliances and equipment runs on Alternative current (AC) so we need to connect to all Solar panels to an Inverter which then converts DC into AC.

Bio-gas Plant: Our college canteen produces an average of 20 kg of waste per day. We dump the waste into a biogas plant, as well as mulch from other plants in college. This waste we two This waste we compost two days in the biogas plant its We dump the waste into a biogas plant, as well as mulch from other plants in college. This waste we decompose in the biogas plant for two days It provides an average of 2 kg of biogas per day.

The inlet of the biogas plant is the mixing tank. In this mixing tank, the biomass is mixed with the water to from slurry, bus slurry is a composition of the water and vegetable waste as well as tree waste. And it is the over ground structure.

The digester (air-tight chamber) is an area with the absence of the oxygen (basically an an aerobic region) and the presence of microorganisms (the anaerobic bacteria). This bacteria are capable to decomposing the substance in absence of oxygen.

The biogas plant is to produce the gases, like methane and other side products like carbon dioxide, hydrogen, hydrogen sulphiteetc. In this biogas plant 60-65% methane is produce. Thus, it can be used in collage canteen for cooking gas.

Producing Fertilizers from Urine

Collages as well as other institutions produce a lot of urine every day and it is wasted. So, we think producing fertilizers from urine in our SIT Polytechnic Yadrav. A normal human can produce approximately 1 lit. Urine per day. The fold number of our collage is about 1000. After calculation, daily producing urine in campus is 1000 lit. Per day.

In this, we build storage tank for daily producing urine. There will be 6 storage tank. Each tank of 1 cubic meter. We collect urine of 6 days i.e. from Monday to Saturday. The urine produced in one day will be stored in a tank of liquor, then the urine will be heat with the help of solar heater, then the water will be drained and the remaining component can be used for agriculture as NPK fertilizers.

Solid Waste Management Producing New Files and Sheets from Paper Waste

We are going to recycle and reuse the paper waste in college, student's manual,

assignment pages, file drawing sheets and office waste paper.

First we will store all this paper, then we will cut it into small pieces with the help of paper cutting machine. Soak the pieces of paper in water for 3 to 4 hours, pulp the soaked paper with the help of hydro pulling machine, mix alum alum, rosin and cotton pulp while pulping.

The proportions of alum & rosin are as follows

Sr.no.	Waste paper	Rosin(gm)	Alum powder(gm)
1.	1 Kg	30	60
2.	2 Kg	60	120
3.	3 Kg	90	180
4.	4 Kg	120	240
5.	5 Kg	150	300
6.	6 Kg	180	360

Make a layer of pulp on the wooden screen frame mold and lay it on a cloth. Dry the sheet completely with the help of water pressing machine. After the sheet is completely dry, we will straighten and flatten the sheet la calendar press machine and cut the actual size from the sheet cutting machine. Then we will use that sheet for files and drawing sheet.

CONCLUSION

The green campus concept is a breath of fresh air in a change towards a sustainable campus. The application of this concept can bring a positive change in both teaching and learning activities.

Constraints faced in implementing new concepts are common. Everything depends on the readiness and willingness of the campus to apply the concept. This concept is also a concept that supports government programs in sustainable development goals.

Use of 3R concept. Also, economy can be achieved.

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