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Sustainable Green Town

Mr. Harshal Rajendra Thakur

Student, Civil Engineering, SOET, Sandip University, Nashik

Abstract: Aim of this research paper is to design and implement the sustainable term for the town planning with low resources and high output, as well there benefit to environment. Town planning in ancient India of Indus towns have demonstrated the most ancient town planning in the world among the most common and universal types of town planning (Mohenjo-Daro). Increase in population, Development or innovation leads to great use of natural resources, which may disturb the environmental cycle. Though green resources are not sufficient but they are long lasting and environmental friendly. Energy sources from Sun, wind and water are clean sources which are future, with proper use. To find various sources (types such as minor and major sources) of energy and implement with exigency, for sustainable strategic planning.

Keywords: Green town, sustainable green town, solar power, water harvesting, self-generation

I. INTRODUCTION

As the population is increasing in India the accommodation problems are now being raised now a days this leads to expansion of city or town. [1]Town planning is an ancient profession identified by different names, characterized by challenges related to peculiar civilizations and unified by a desire to proffer solutions to man's pressing needs. It is also referred to as Urban Planning. Susan Fainstein (2014) defines urban planning as the design and regulation of the use of space that focus on the physical form, economic functions, and social impacts of the urban environment and on the location of different activities within it. Town planning concerns itself with both the development of open land and the restructuring of existing parts of the city. It therefore involves goal setting, collection and analysis of data, design, strategic thinking, and public consultation. Any activity in urban planning has the capacity to influence the physical environment, the economic environment and the socio-cultural environment of the town. Thus the increase of such township may lead to more use of resources and more pollution.as a good solution for green electricity generation and mass rain water harvestings town adoption to new technology which will be economical and easy to work on it.by adopting such technology a town or city can generate approximately 5-6kWh/house. According to the surveying 2014, an electrified Indian household consumed about 90 units (kWh) of electricity per month on an average; enough to run four tube-lights, four ceiling fans, a television, a small refrigerator, and small kitchen appliances with typical usage hours and efficiency levels in India. Considering the cost for solar plant of 5-6 kWh in India is 3-3.5 lakh rupees, and further the state and central Government subsidy reduces the cost of such micro solar plant.

Water harvesting by new method can increase in water storage as well as for recharging groundwater. A new concept of permeable concrete which can be used to collect and naturally clean the water and directly send to storage and daily use. By using such techniques in small area large amount of water will be collected and double the water saved by rainwater harvesting. It can be used where low volume traffic area, parking slot etc.

II. CONCEPTS

Solar energy/power is one of the best renewable energy, from sun is converted into thermal or electric energy. To harness this energy for variety of uses as generating, providing light or comfortable interior environment as such energy will be used for supply of power to a particular town, a place with many streets, building, parks etc. Streets can also generate micro amount of energy using sun and speed breakers, by the new concept of solar roads and e-bumps which can generate 2-3kWh power, while one bump can generate 65-70W of energy this gets change according to volume of traffic. Just by adopting such new techniques in small towns it will generate more than 30-35 kW per 100-250m per day by just streets fig 1(a) solar road, 1(b) speed bump/e-bump.



Fig 1(a) solar road

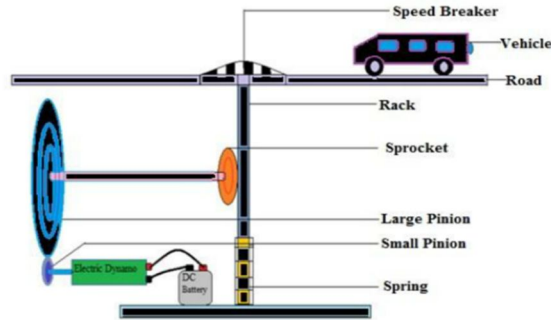


Fig 1(b) speed bump

Fixing of micro/mini solar plants on the roof top can generate normally 6-8.5 kWh it may vary from place to place due to climate condition as sun light may not be sufficient to generate it, although on daily basis this can generate 50kW fig 2.



Fig 2 roof top solar system

In parks by playing, driven by children's physical activity i.e. carousel, swing and slide can electrifies about 20-25kW per day fig 3(a) swing, 3(b) see-saw

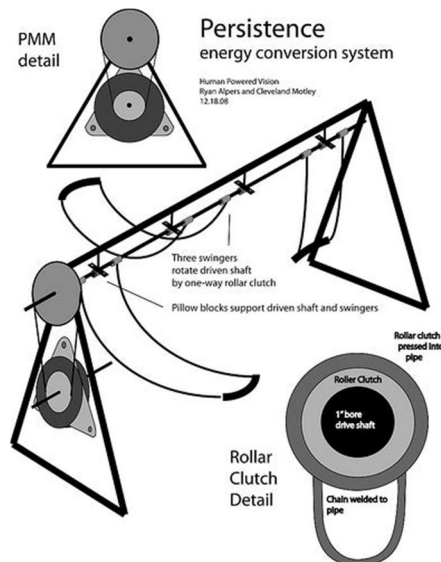


Fig 3 (a) swing

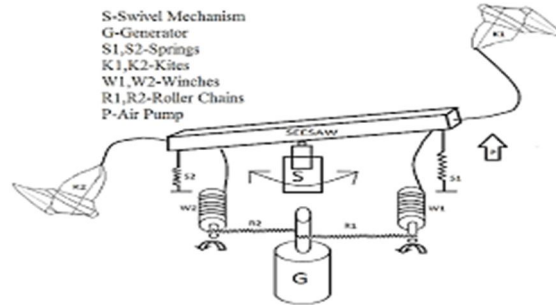
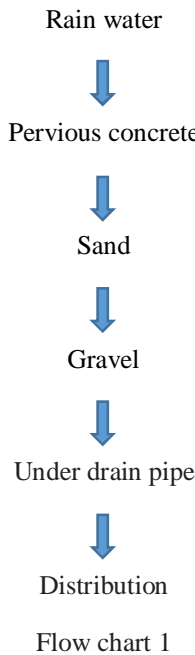


Fig 3 (b) see-saw

Water harvesting using permeable concrete in open space, parking and footpath which can stored and used for bath, gardening etc. using natural process of water filtering (sand, stones, gravel) such that by making the pits and applying the filters of different material used for filtering water, natural purification effects within filter layers and in the subsurface are caused mainly by filtration, sedimentation, precipitation, oxidation-reduction, sorption-desorption, ion-exchange and biodegradation.

Water evaporated from the ocean eventually condenses as water droplets in clouds. If the cloud grows large enough, the droplets coalesce and fall as precipitation, mostly as rain, sometimes as snow or ice when the temperature is very low. 74% of all water evaporated into the atmosphere falls as precipitation on the ocean, mostly in the tropics. 26% falls on the land. But the distribution of rainfall is very uneven as the rain water comes to ground some of them are absorbed in ground and runoff make them go through river or canals. This water when comes in the area of harvesting thus permissible concrete allows to pass from it easily in different filter layers and at last connected to pipe disturbing in different area of uses. Flow chart 1



III. RESULTS

Adopting the concept following are the outcome of energy and water harvested

Sr.no	Name	Output per day (kW)	Output per month (kW)
1	Solar road	180-190	5400-5700
2	Speed bump	6	180
3	Roof top solar	45-50	1350-1500
4	park	15-20	450-600
		Total	7680 kW

Table no 1 output of energy



The result is more than the consumption of 90kw Indian uses.

1	Harvesting water	1000 liters
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Table no 2 output of water

Note: - as per the climatic changes from region to region values may differ.

IV. CONCLUSION

Our implemented system works more than required consumption correctly this types of changes in town, city can be implemented in real life and successful run them. It reduces the amount of resources used for generating and filtering such daily needs, that reduces amount of pollution and reduction of toxic gases in atmosphere.

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