

TOTAL ENVIRONMENTAL MANAGEMENT FOR RESIDENTIAL COMPLEX

Er. Sunil Bhat

TechnoEnviron Consultants
Shreyas , Haripur Road, Sangli 416416
Phone (0233)2333996 Fax:2330625
E Mail : san_svb@sancharnet.in

With ever increasing resource crunch, the concept of conservation and deft utilization of all natural resources has gained momentum. Water being scarce in quantity, and with ever-increasing population and load, has to be utilized in a most optimum manner.

There is growing awareness that the increasing scarcity of resources can be countered only by judicious use of the same and more and more conservation of the fast depleting storages. Since waste is essentially defined as misplaced resource, its conservation in form of reuse wherever possible is best possible mode.

With the increase in onslaught on urbanization, great demands are exerted on the water supply systems as well as wastewater collection and treatment systems. It is observed that an average family consisting of 5 to 6 members consumes around 1 KL. of water for human consumptions and about 0.5 KL. for gardening and other activities everyday. The wastewater collection and treatment systems are overloaded by 100% in many a cities due to bad planning, maintenance. This is resulting in major pollution source for the receiving waters, mainly rivers. It is demonstrated at various places that selective, low cost treatment systems can render this wastewater suitable for gardening purpose. This will achieve the dual purpose of reducing the water consumptions as well as the load on collection and treatment systems.

1) WATER SUPPLY :-

In order to ensure sufficient and hygienic water to the residence, it is proposed to adopt Rain Water Harvesting of the entire area and utilize the collected water for increasing local ground water table. This will ensure at least 50% of the water requirement for the entire year. This water along with the water from other sources is proposed to be purified by highly sophisticated water purification plant consisting of filtration and disinfections, ensuring standard quality water. It is also proposed to utilize softening plant to reduce salty nature of bore well waters for utility purpose.

2) SEWAGE TREATMENT :-

The waste waters from toilets i.e. sewage is proposed to be treated in well designed treatment plants comprising of Septic Tanks, Anaerobic Filters, followed by Aerobic and Tertiary Treatment achieving the standards/water quality for disposal on land for gardening. This treated water will be

utilized to irrigate the internal gardens, thereby saving in fresh water demand for the purpose.

3) SULLAGE WATER TREATMENT :-

The wastewater from Bathrooms and Kitchen can be well treated in an Advanced Water Purification Plant consisting of pressure filtration as well as ultra- filtration membrane, rendering it useful for car washing, and flushing purposes. This practice is followed in all megacities now, achieving not only 50% saving in water consumptions, but also reducing the load on wastewater conveyance and treatment plants.

4) BIODIGESTION OF SOLID BIODEGRADABLE WASTE :-

A substantial portion of our food waste is biodegradable (38-40%) which is used to generate methane. This methane gas can be used as fuel for heating or for generating electricity. The lignocellulosic and hemicelluloses portion of vegetable waste and paper yield manure. Manure obtained from such waste has high nitrogen contents. This manure acts as an excellent soil conditioner. The carbon to nitrogen ratio of this manure is 12:1 (similar to fertile land). It has phosphorous, potassium, iron and magnesium in small quantities. It is weedfree and does not have any offensive smell.

5) SOLAR WATER HEATERS :-

Given the high cost and scarcity of Electricity, the world is turning to alternative sources of Energy. The electricity bill is a major burden for any family today and the major contributor is the Conventional Electric Water Heater. Gas heaters, though operationally cheaper as on date, shall not remain so, once the subsidy portion is reduced, besides being hazardous as compared to Solar Energy, which is in abundance and free of cost.

It is therefore imperative that an Ideal Green Housing Project has all the above facets, ensuring maintaining semblance of Environment, besides ensuring self-reliance and optimum utilization of natural resources and make the society Environment friendly.

•••