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ECO-FRIENDLY MATERIAL

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Abstract:

Being eco-friendly or environmentally friendly is becoming more and more important. You can see the term used in everything from job ads to dating profiles to even listings houses and vacation homes. So, what is being eco-friendly? The simplest way to define what being eco friendly means is to say that it is the act of living with intent. The intent is focused on not creating harm to environment, and to prevent as much harm from occurring to the environment through your interactions with it. It goes beyond an idea and extends to actual practices that influence how communities, businesses and individuals conduct themselves. Being eco-friendly goes far beyond just turning off lights when you leave the room or separating your garbage for recycling – it is about changing the purpose of how you live. Eco-friendly products promote green living that help to conserve energy and also prevent air, water and noise pollution. They prove to be boon for the environment and also prevent human health from deterioration. You can start to become eco-friendly by becoming aware of the how your choices effect the environment. There are three basic stages to becoming eco-friendly, they Learning to consume items that cause minimal environmental harm. Discovering the extent of your carbon footprint and acting to lessen that footprint on the environment. Striving to support others that work to live and produce eco-friendly and sustainable communities.

1. INTRODUCTION

Eco friendly products are the products that do not harm the environment,wheather in their production or disposal. This team most commonly refers to products that contribute to green living or practices that help conserve resources like water and energy. Other green products are biodegradable, recyclable or compostable,hence they do not harm the environment or upset the ecological balance when they are disposed of. There are also eco-friendly products that are made out of recycled materials. These recycle products help reduce the need for new raw materials and the amount of waste sent to landfills and incinerators(because waste can be diverted to making recycled products) Eco-friendly products also prevent contributions to air,water and land pollution. With the increasing global carbon foot print together with the environmental damage cause by industry toxins &emissions,many companies the world over have switched over to eco-friendly processes &operations. It help preserve the environment by significantly reducing the pollution they could produce. Eco-friendly products can be made from scratch, or from recycled materials. This kind of product is easily recognizable as it is, in most cases, labelled as such.

1.PLASTIC POLLUTION

It is such a popular material because it is flexible, lightweight, moisture resistant, and inexpensive. Even if plastics are found deep inland, they eventually find their way to the sea or ocean through rivers and streams. The global consumption of plastic was 260 million tons in 2008. It is estimated to reach 297.5 million tons by 2015. Bio-degradation is the natural break-down of organic substances. For example, dead plants and animals eventually decay. Plastic does not bio-degrade. Nature does not know how to break down plastic because of what plastic is made of. Photo-degradation is the break-up of materials by the sun. When something is photo-degraded, it does not change its composition the way it does if it were bio-degraded. The only thing that changes is its size. Plastic can photo-degrade.

In large periods of time, plastics break down into very small pieces of plastic that float around. Plastic Pollution has many negative effects on the environment. We will discuss the impacts on birds, fish, turtles, coral reefs, human health, and on tourism and the livelihood of people. Only 27% of plastic bottles are recycled (1) The rest sit in landfills where they can take up to 1,000 years to decompose. One million seabirds and 100,000 marine mammals die each year from plastic pollution in our oceans. In one study by the U.S. Centres for Disease Control, nearly 93 percent of people tested positive for BPA (a potentially harmful chemical present in plastic products).

2. SOLUTIONS

Reduce, Reuse, Recycle (2)

Reduce the amount of disposable plastics you use Bring your own bag to the store or market instead of using new plastic bags. Purchase plastic items that are made of recycled material Use your house metal spoons, forks, and knives instead of plastic utensils Reuse Use old plastic

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bags as garbage bags instead of buying new ones Refill your old plastic bottles at home instead of buying water when you're out Recycle Instead of throwing all your garbage into one bin at home, you can make a separate bin or even a cardboard box specifically for garbage that can be recycled o The Recycling Network of Belize has collection centres at the Radisson Fort George in Belize City and at the recycling plant in Ladyville All plastics except for Styrofoam Paper and cardboards Batteries except for car batteries

E-waste: computers, radios, and other electronic devices Screens, monitors, and television.

GREEN MARKETING

Environmentally-responsible or "green" marketing is a business practice that takes into account consumer concerns about promoting preservation and conservation of the natural environment. Green marketing campaigns highlight the superior environmental protection characteristics of a company's products and services. The sorts of characteristics usually (3) highlighted include such things as reduced waste in packaging, increased energy efficiency of the product in use, reduced use of chemicals in farming, or decreased release of toxic emissions and other pollutants in production. Marketers have responded to growing consumer demand for environment-friendly products in several ways, each of which is a component of green marketing.

These include: promoting the environmental attributes of products; introducing new products specifically for those concerned with energy efficiency, waste reduction, sustainability, and climate control, and redesigning existing products with an eye towards these same consumers. Marketing campaigns touting the environmental ethics of companies and the environmental advantages of their products are on the rise. Most observers agree that some businesses engage in green marketing solely because such an emphasis will enable them to make a profit.

Other businesses, however, conduct their operations in an environmentally-sensitive fashion because their owners and managers feel a responsibility to preserve the integrity of the natural environment even as they satisfy consumer needs and desires. Indeed, true green marketing emphasizes environmental stewardship. Green or environmental marketing may (4) be defined as any marketing activity that recognizes environmental stewardship as a fundamental business development responsibility and business growth responsibility. This expands, to some extent, the traditional understanding of a business's responsibilities and goals. They contended that a green product should not:

Endanger the health of people or animals Damage the environment at any stage of its life, including manufacture, use, and disposal Consume a disproportionate amount of energy and other resources during manufacture, use, or disposal Cause unnecessary waste, either as a result of excessive packaging or a short useful life Involve the unnecessary use of or cruelty to animals Use materials derived from threatened species or environments

HYBRID VEHICLES

Hybrid vehicles are vehicles that use more than one energy source in order to move. The most common type of hybrid vehicle is the hybrid-electric vehicle (HEV), which combines an electric motor powered by a battery and an internal combustion engine that relies on fossil fuels. In the 1990s, hybrid vehicles became widely commercially available with the release of the Toyota Prius and the Honda Camry Hybrid. Within the past decade, more than a dozen types of hybrid vehicles came into production. Hybrid vehicles are vehicles that combine two forms of power in order to move. Some of the more common forms of power include a rechargeable storage system coupled with a fuel-burning internal combustion engine.

Other engines include air engines and internal combustion engines or human-assisted internal combustion engines. Most of the large trains in use are diesel-electric locomotives that can use electrical power when they are on tracks supplied by overhead wires and diesel power when they are out of range of these wires. The most popular type of hybrid vehicle in use as a passenger car combines a gas-burning internal combustion engine and energy from an electrical battery

A.WORDS TO KNOW

BATTERY: Device that can easily convert stored energy in the chemical bonds of an electrolyte into electrical energy.
FOSSIL FUEL: Hydrocarbon fuel that has been obtained from the death and decay of living matter millions of years ago.

B. INTERNAL COMBUSTION ENGINE

An engine that relies on the chemical energy released during the combustion of a fuel to create power Primary source, greenhouse-gas emissions has many businesses making a green transition that, although expensive to start, is paying off through an environmentally friendly reputation and the long-term cost cut of using less gasoline. And the hybrids' green- House-gas emissions will be 90 percent less than those from regular vehicles, according to the manufacturer of the

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new vehicle. "It's a small step, but it's one of those steps that if we keep taking, we will be leaving a better world for our kids.

4.BUILDING MATERIALS

- Today many people that are building or remodeling their houses choose to use eco-friendly building materials. An eco-friendly building material is one that increases the efficiency of energy used and reduces impact on human well-being and the environment.

A. Categorization of Building Materials

Civil materials, Waterproofing and Chemical additives, Paving, flooring, dado and similar finishes, Paints, colors, white washing, distempering and wood finishes, Wood work, Roofing and ceiling, Doors and windows, Water supply and sanitary fittings, Electrical works, Fire fighting system, Miscellaneous, Excavation work, Road works, One more point to note when we talk of eco-friendly construction is that it consist of two parts – Material and Technique.

A material by itself can be eco-friendly, e.g. Bamboo. Or Even conventional materials can become eco-friendly based on the construction technique that is used. e.g. rat trap bond developed by Lauri Baker, which require less number of bricks and are more heat insulating than normal walls and therefore eco-friendly. Materials can be eco-friendly also if they can assist in reduction of the energy used in the building during operation and maintenance. it is difficult to get a material that has all these properties, and it thus becomes a comparative assessment to identify eco-friendly materials

B. SOURCE OF MATERIAL

- **Renewable source**
  - Rapidly renewable sources e.g. wood from certified forests
- **Reuse of Waste**
  - Salvaged products –e.g. old plumbing, door frames
  - Recycled contents – agriculture/ industrial waste e.g. Bagasse Board
  - **Embodied Energy**
    - Scalar total of energy input required to produce the product including transporting them to the building site
    - **Reduce Pollution**
      - **Air Pollution**– Use of materials with low VOC emissions e.g. Cement Paints
      - **Water Pollution** – Materials that prevent leaching.

Land Pollution– Materials that reuse waste that would otherwise have resulted in landfill. e.g. Flyash Bricks

- **Performance**
- **Reduce material use**
- These are energy efficient and also help reduce the dead load of a building. e.g. Ferrocement

C. Durability & Life Span

- Material that are exceptionally durable, or require low maintenance e.g PVC pipes.
- Materials can be eco-friendly based on how they perform. Use of certain material or techniques can reduce the amount of material required.
- Durability – The longer the life of a material the lesser it is required to replace and thus reduces the quantity required to produce.

- Materials that require less energy during construction e.g. precast slabs.

Products that conserve energy – e. g. CFL lamps

Recyclable

- Reuse or Recycle as different product e.g. steel, aluminum.

Biodegradable – that decompose easily e.g wood or earthen materials.

There are even materials for countertops that are eco-friendly. Two great choices are recycled glass/cast concrete and recycled plastic. Recycled glass/cast concrete uses both recycled glass and concrete with recycled materials in it. The glass used in this material can not be broken down any further, so it is a good fit for countertop construction. It can also be used in the bathroom and surrounding fireplaces. Recycled plastic is another good option for countertops.

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You can obtain many different styles using different types of recycled plastic. It can also be used in bathrooms and other places around the home. It is very durable and can stand up to heat, depending on how it is manufactured, and is very water resistant. There are many different eco-friendly building materials available on the market today. You can virtually build and furnish an entire home from only eco-friendly materials. Eco-friendly materials are not only good for the Earth, but are equally good for your wallet. Many of the building materials that are eco-friendly have great insulating factors or are cheaper to produce than traditional materials.

5. PACKAGING MATEIALS

Packaging materials should be:Reusable Recyclable Packing is an important concern for consumers,particularly those who are interested in environmentally-friendly buying behaviors. Using biodegradable materials using recycled and recyclable materials.Minimizing the energy used for production and transportation of goods. Minimizing the amount of packaging used(weight and volume). Some of theeco friendly packaging materials are:bio plastics Recycled papers Forest wood Palm leaf.

A. BIO- PLASTICS

- These are plastics made from plants. The starch contained within the plant is processed to produce a polymer.It is actually possible to produce most polymers from the bio materials,but the bio plastics London Bio packaging uses most commonly are Ingeo TM PLA(poly –lactic acid) Bio- plastics behave in a similar way to conventional plastics and are suitable for most packaging applications.

B.SUGAR BAGASSE

- The waste materials produced once sugar cane has been harvested for the sugar syrup is called baggase. This fibrous material is a renew able what's better is that is is made from a waste product-is it reduces,

C. RECYCLED PLASTIC

- RPET (recycled polyethylene terephthalate) is the most common plastic that is being recycled back into primary applications(i.e. botteles recycled back into botteles are not 'down cycled' into lesser products like park furniture).
- Recycled plastics reduce the amount of fossil fuel resources,have a lower carbon footprint than virgin plastics,divert material from landfill and can themselves be recycled.

D. **RECYCLED PAPER**

- Recycled paper products contribute to the diversion of material from landfill and results in less land being given over to commercial forestry which can have a negative impact on biodiversity. Sustainable forest paper ensures that the forests which the paer comes are managed so as maintain forest integrity.

E. PALM LEAF

- These products are natural and compastable.
- They are very stylish,tough and heatresistant.
- Whole leaf products have no pulp,no starch,just a washed and pressed leaf. The palm leaf itself varies in thickness from 2 to4mm, as well as in colour and pattern,so you will find that they vary in thickness,colour and pattern too.

6.DISADVANTAGES

- Heavy and breakable
- Can be recycled almost infinitely without degrading.
- Chemically inert
- Uses the least energy per pound to recycle
- Glass

7. ECOFREINDLY MATERIALS-KEY WORDS

CO_2,icon,tree,flat,bulb,air,gears,isolated,bin,electric,natural,save,on,green,white,ecoFriendly,earth,conservation,emissions,engineering,bio,sign,recycling,symbol,lightBulb,environmental,electricity,recycle,ecology,light,biological,reduction,clean,waste,trach,idea,development,label,amanagement,protection,energy,efficiency,protect,design,produc

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tion,reusable,recyclable,planet,paper,sustainable,set,reduce, background,container,water,nature,resources,environment,r euse,ecological,globe,effective,material.

8. PROPERTIES OF ECO-FRIENDLY MATERIALS

These materials causes minimum damage to the environment ,right from the manufacturing to final product. Require minimum energy during manufacturing. They do not emit harmful gases/furmes during manufacturing. These are locally available and can be extracted from nature very easily. At the end of the useful life, there is a possibility recycle and reuse

CONCLUSION

- Sustainable/economical/eco friendly building material.
- Easy and simple technology.
- Creates employment opportunities.
- Reduce deoendency on import of bricks.
- Making housing affordable

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