



DESIGN INSPIRATION FROM NATURE

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ABSTRACT This papers aim is to highlight the impact of present day innovations on human health, society, psychology, nature, environment, flora, fauna, etc. and to address problems like environmental degradation, pollution, ozone depletion, etc. It has its Relevance Because of environmental degradation to an alarming scale such step will help in further controlling the deterioration of natural environment. Aim is to design for “green not greed”. shelters should be nature friendly, food should be organic, clothes should be environment friendly climatic appropriate shelter, food, clothes lead to nature friendly innovations. Different Methodologies throw light on Different impacts of innovations from literature had been high lighted to bring about general awareness among masses for bring about behavioral change. All the innovations must go through zero tolerance environmental impact assessment by multiple agencies. Examples from nature: learn from termites how they build homes, learn from ants to dig, learn from nature to recycle waste. humans are students of nature they are just trying to find out the theories behind wonders of nature like gravitational force, magnetic force, ecosystems, symbiosis, day and night cycle, seasons cycle, high-low tide. Researchers had reported that human health is benefitted by interaction with nature like plants in offices, walk in parks, playing in nature, forest walk, children playing in nature parks, students ability to perform in classes improved by interaction with nature, attention deficit disorder was cured with the help of nature involvement. exercise in presence of nature had been reported to improve performance and wellbeing, thus nature innovation ideas can be borrowed and their application in day to day life for public health can be incorporated. Design innovation should be in sync with nature, minimal changes should be made to alter for setting up projects. Our impact on this earth should be minimal and support to keep nature intact maximal. It has been found that many of the innovations had lead to deterioration of environment in the name of development/ advancement/betterment. Whatever we are creating is there in nature already so why spoil nature's balance and pollute it in the name of development. Villages were self sufficient in terms of resources but we made cities and polluted them in the name of industrialization/development. Following Conclusions and Recommendations were put forth Environment friendly innovations to be accepted, patented, advertised, produced, aim should be Green instead of Greed.

KEYWORDS : organic, vernacular, green**Introduction:**

“Humans will be truly sustainable when our cities are functionally indistinguishable from our forests” Janine Benyus
This can be achieved by inspirations from nature since:

- Nature runs on sun light
- Nature uses only the energy it needs
- Nature fits form to function
- Nature recycles everything
- Nature curbs excesses
- Nature guards survival
- Nature promotes symbiosis

Aim: To highlight the impact of present day innovations on human health, society, psychology, nature, environment, flora, fauna, etc. and to address problems like environmental degradation, pollution, ozone depletion, etc.

Relevance: Because of environmental degradation to an alarming scale such step will help in further controlling the deterioration of natural environment.

Methodology: Different impacts of innovations from literature had been high lighted to bring about general awareness among masses for bringing about behavioral change. All the innovations must go through zero tolerance environmental impact assessment by multiple agencies. Some examples of applications from inspiration from nature:(refer annexure 1)

Termite Air conditioning

Bullet train Nose Design

Water problem solution for desert

Bacteria free surface for hospitals

Clean surfaces

The core idea is that nature, imaginative by necessity, has already solved many of the problems we are grappling with. Animals, plants, and microbes are the consummate engineers. They have found what works, what is appropriate, and most important, what lasts here on Earth. This is the real news of biomimicry: After 3.8 billion years of research and development, failures are fossils, and what surrounds us is the secret to survival.

We are learning, for instance, how to harness energy like a leaf, grow food like a prairie, build ceramics like an abalone, self-medicate like a chimp, create color like a peacock, compute like a cell, and run a business like a hickory forest.

Findings: It has been found that many of the innovations had lead to deterioration of environment in the name of development/ advancement/betterment. But what the answer to these problems leads us to get inspirations from nature about design solutions.

Biomimicry (from bios, meaning life, and mimesis, meaning to imitate) is a new discipline that studies nature's best ideas and then imitates these designs and processes to solve human problems. Studying a leaf to invent a better solar cell is an example. I think of it as “innovation inspired by nature.”

The conscious emulation of life's genius is a survival strategy for the human race, a path to a sustainable future. The more our world functions like the natural world, the more likely we are to endure on this home that is ours, but not ours alone.

If we want to consciously emulate nature's genius, we need to look at nature differently. In biomimicry, we look at nature as model, measure, and mentor.

Nature as model: Biomimicry is a new science that studies nature's models and then emulates these forms, process, systems, and strategies to solve human problems – sustainably. The Biomimicry Guild and its collaborators have developed a practical design tool, called the Biomimicry Design Spiral, for using nature as model.

Nature as measure: Biomimicry uses an ecological standard to judge the sustainability of our innovations. After 3.8 billion years of evolution, nature has learned what works and what lasts. Nature as measure is captured in Life's Principles and is embedded in the evaluate step of the Biomimicry Design Spiral.

Nature as mentor: Biomimicry is a new way of viewing and valuing nature. It introduces an era based not on what we can extract from the natural world, but what we can learn from it.

Conclusions and Recommendations: Environment friendly innovations to be accepted, patented, advertised, produced, aim should be Green instead of Greed. And the answer to this is Biomimicry.

Annexure I:

HUMAN DESIGN

- Mining—39 billion tons/yr
- Heat treating—over 1,400 °C releases 6% of GHG
- Packaging
- Shipping

PHOTOS: LOR. REYNOLDS, DANA, COOPER; ILLUSTRATION: GREGORY BORGMEYER; PHOTO: MICHAEL TAYLOR/ISTOCK/ALAMY, R. SE. COURTESY

BIOMIMICRY 3.0

NATURE'S DESIGN

- Built to shape
- Created on site
- Uses CO₂ as a building block
- Waste-free
- 450 million year old process

PHOTO: DAVID SODER/ISTOCK/ALAMY

BIOMIMICRY 3.0

AquaMat



BULLET TRAIN



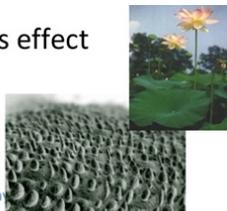
KINGFISHER BEAK



BOXFISH & MERCEDES BIONIC

Biomimetics: Lotus effect

- most efficient self-cleaning plant = great sacred lotus (*Nelumbo nucifera*)
- mimicked in paints and other surface coatings
- pipe cleaning in oil refineries (Norway)



- Images from
- <http://library.thinkquest.org/27468/e/lotus.htm>
 - <http://www.villalachouette.de/william/lotusv2.gif>
 - <http://www.nees.uni-bonn.de/lotus/en/vergleich.html>



Thirsty?

Living in the desert the thirsty Namib beetle collects dew to drink using nanodots on its back.

So What can Thirsty People Do?

Thirsty people in Chile and Haiti go to ridgetops to collect fog on large sheets on ridgetops.

But as we learn about nanoscience in nature...

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