MILESTONE ecofirst
Sustainable By Design

"The global economic cost attributed to bee decline, including lower crop yields and increased production costs, has been estimated at as high as $5.7 billion per year" Source – National Resources Defence Council , USA

Sustainable By Design

GreenBee

A Milestone Ecofirst initiative.

Milestone Ecofirst thought leader speak…..

At its deepest level, I see Sustainability as a Value System. Central to this Value System is the concept of "Balance" or "Equilibrium".

PG Ganapathy
Director, Milestone Ecofirst Advisory Services Pvt. Ltd.

What is Sustainability?

In the last issue, I mentioned that "Sustainability" is a "catch-all" phrase and means different things to different people. In this issue, I would like to put forth my perspective of Sustainability for you to reflect upon.

At its deepest level, I see Sustainability as a Value System. Central to this Value System is the concept of "Balance" or "Equilibrium". It is about taking a systems view of the world we live in – as a delicate, finely balanced, harmonious system with appropriate feedback loops, checks and balances and control mechanisms built into it, to ensure its own long term survival.

It is therefore a value system that is characterised by a sensitivity and connectivity to the nature / environment around us, a certain moderation and generosity in our actions and attitudes, a tendency to be inclusive and think community or the greater good, respect for human health, respect / appreciation of tradition and culture, etc. This may all sound too much for a term that is used so loosely, but this is what I think and feel about it. In simple terms sustainability means "continuity" in the long term and I believe all the above values are important to ensure such continuity (of the human race / mankind)

So, as far as the Built environment is concerned, it is about bringing all these "values" into the Planning, Design, Construction and Operations of the Buildings and associated community infrastructure, that go towards creating the physical Built Environment around us. So, what does that mean – it means conservation and careful use of resources in the construction and operation of Buildings (Minimalistic Design) energy and water efficiency, reuse / recycle of waste, connectivity with nature – daylight, ventilation, views, fresher indoor air quality and pleasant external microclimate, renewability of resources, environmentally degradable materials, etc. To all this, I would also add "cost efficiency" since I firmly believe that "True Sustainability" is also about "Simplifying" and "Minimising" and hence should save cost – not only life cycle costs, but also initial capital costs.

Happy Reading.

PG Ganapathy
Director

MORE INSIDE

GREEN MATERIAL SERIES
The consumption of materials in the built environment across *more... on pg 2*

SOLAR WIND POWER
German company Bluenergy AG have created the ultimate integrated. *more... on pg 3*

Milestone Ecofirst Buzz - Green Material Series:

At Milestone Ecofirst, our knowledge management wing has undertaken research on cost-effective sustainable building materials and also strongly promote their use in all our projects. Starting from this issue, we bring you a series of articles from our knowledge repository which will focus on the innovative, cost-effective and sustainable materials which should be adopted by the modern construction industry.

Bamboo Revolution:




Bamboo has been used for many common uses such as furniture, garden tools, handicrafts, musical instruments, paper etc, because of it being a long term and sustainable product. Although it has been extensively used for scaffolds and supports during construction of permanent built structures, Bamboo has found limited use in the built environment till now due to absence of a proper technology for treatment and processing.

Bamboo is one of the fastest growing woody plants in the world. As the world's forest reserves are depleting, Bamboo has a great potential to be used as a cheap, renewable and alternative source for timber. With improved technology, Bamboo can now replace many other building materials as a cheaper and stronger material. Bamboo is thus the future of the sustainable building construction. Some of the innovative modern uses of bamboo in the construction industry are presented below:

BAMBOO-CONCRETE REINFORCEMENT: Bamboo can be used as reinforcement instead of steel in RCC.

BAMBOO MAT BOARD: These mat boards are superior to plywood in strength and life. Bamboo cut into slivers, woven and hot pressed.

BAMBOO CORRUGATED ROOFING SHEET: These roofing sheets are substitute to corrugated Asbestos Cement sheets, GI sheets, Aluminum sheets and Fibre-reinforced Plastic (FRP) sheets

BAMBOO MAT VENEER COMPOSITE: This composite has many uses such as door skin in flush doors, structural use as roofing, web construction, modular partitions

FIBRE REINFORCED BAMBOO COMPOSITE: for Partitions, false ceilings and interior finishing on walls

BAMBOO LAMINATED COMPOSITE: for flooring, walling and partitions

Contributed by Kadam Aggarwal, Manager for Energy & Climate Change and knowledge Management at Milestone Ecofirst Advisory Services (I) Pvt. Ltd. He is a BTech, Metallurgical Engineering and Materials Science from IIT Bombay.

Cross Pollination

Apple may be planning to develop "Solar Powered iPhones", as suggested by their recent patent filings that describe putting solar cells on all portable devices. Though the next couple of iPhones may not incorporate solar cells as they are still in the early stages of exploring this technology, it's intuitive to realize that the company is looking to put more and more devices on solar power and eventually include iPhones. As per the patent application, Apple would completely cover the device in a thin film layer of solar cells, under the display screen. See attached picture and link for more info.

Weblink:
1. http://news.techworld.com/green-it/3225981/apple-patents-solar-power-for-iphone/?olo=rss
2. http://www.engadget.com/2010/06/06/apple-patent-application-hints-at-solar-powered-iphone/

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Bluenergy Solarwind™ Turbine design

Straight from the "Beehive"

Solar wind power hybrids have a bright future as many companies are coming up with new creations and better models. German company Bluenergy AG have created what seems to be the ultimate integrated solar vertical axis axis wind turbine called Bluenergy Solarwind™ Turbine. It consists of "double-helix designed" curved wind vanes mounted on a vertical axis and covered with encapsulated solar cells. Electricity produced by both turning generator and solar cells is merged in an enclosed inverter in its base and delivered as 120/240 VAC. This system also only needs 4mph wind and is rated for speeds of up to 90mph!

This design is inspired from sailing engineering where a wind rotor is turned by two spiral shaped vanes. The set up costs are not that expensive, and it produces no sound or considerable shadowing and it can be maintained from floor level. Its upright wings can also be lowered horizontally for easier access. One interesting highlight of its design is that the solar cells are kept cooled by the revolution of the turbines which helps the cells generate more electricity.

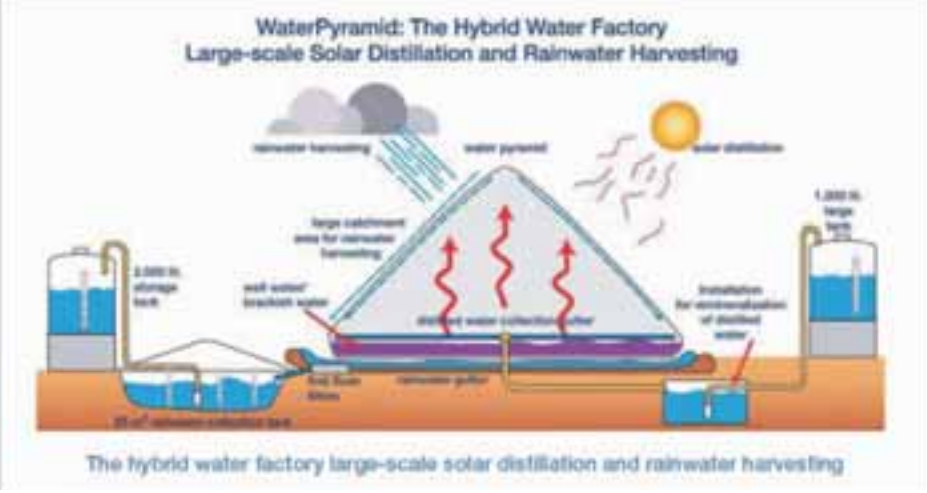
Source:
Video: http://www.bluenergyusa.com/VideoPlayback2.html
Link: http://www.bluenergyusa.com/index.html

India Buzz

The women in the village of Roopji Raja Beri in the desolate Thar Desert of Rajasthan, India, walked more than four kilometers for drinkable water, spending six hours per day to fetch water, until Martijin Nitzsche's, an engineer from Netherlands, introduced the innovative "Water Pyramid" – a unique system he developed that uses solar power to provide clean drinking water, to the residents of the village in coordination with the Jal Bhagirathi Foundation (JBF) based out of Jodhpur.

The water pyramid integrates rainwater harvesting and large scale desalination using only solar energy, creating a sustainable technology that is appropriate for rural villages suffering from saltwater intrusions in water wells. Simple to install, operate and maintain, the structure can be operated by a locally recruited labor force.

Source: Water Environment Federation, USA.



The hybrid water factory large-scale solar distillation and rainwater harvesting

Milestone Ecofirst Buzz... "Embracing solar passive design principles"

"Civilization is a limitless multiplication of unnecessary necessities."- Mark Twain.

Why is it, that we are attracted more by complexity than simplicity? It's probably safe to say that every man is attracted to the latest technology more out of sheer curiosity and awe rather than the actual need or utility. Technological advancements in building mechanical systems have led to quick and easy ways of attaining comfortable indoor environments. But these come not only with high capital costs but also have huge environmental impacts. Somewhere we leave aside our common sense and forget one of our oldest legacies- simple, clean, low cost and long term "solar passive architectural design"

Unfortunately this legacy has not had many followers in the recent past maybe because it never became an architectural "ism" like expressionism, classicism, and functionalism. Passive design demands that site and topography; building location and orientation; building shape (depth, length, and volume); and space use all be looked afresh each time. At Milestone Ecofirst our aim is to integrate solar passive design at the core of our sustainable design approach for projects thereby resulting in a more contextual and efficient design solutions. Site orientation studies, day lighting analysis and detailed shade and shadow analysis are some of the tools that are adopted by us to deliver passive solutions for master planning and building design. Our experience shows that introduction of solar passive design as part of the energy management plan at the early stages of design can help reduce approximately 25-30% of operational energy consumption. This approach can lower our dependence on fossil fuels even further while ensuring healthy and comfortable spaces.

Contributed by Mansi Agarwal, Senior Manager & LEED AP at Milestone Ecofirst Advisory Services (I) Pvt. Ltd. She has a MS in Sustainable Design, Carnegie Mellon University, Pittsburgh, USA

MEAS News

Dr. Manish Shakdwipee, *Senior Manager* at MEAS for Energy and Climate Change appeared for internationally recognized Certified Measurement & Verification Professional (CMVP) examination conducted by Efficiency Valuation Organization (EVO), USA and ***secured first position in India***. The examination was based on International Performance Measurement & Verification Protocol (IPMVP), which provides methodologies to establish energy and water savings.

New Joinees

Sushant Arora *Senior Executive*

Sushant Arora joined us in July. He is a B.Tech in Electrical Engineering from IIT Bombay and his final year project at IIT dealt with concentrated solar power. He is currently a multi disciplinary resource involved with various aspects in projects that includes energy design, new initiatives and business development

Green Calendar 2010

Visit our website www.milestoneecofirst.in for the upcoming Green events in India.

Our services

TOTAL SUSTAINABILITY SOLUTIONS | ENERGY MANAGEMENT | INTEGRATED WATER MANAGEMENT
INFRASTRUCTURE AND MEP DESIGN SERVICES | GREEN BUILDING CERTIFICATION FACILITATION

Reach us at

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