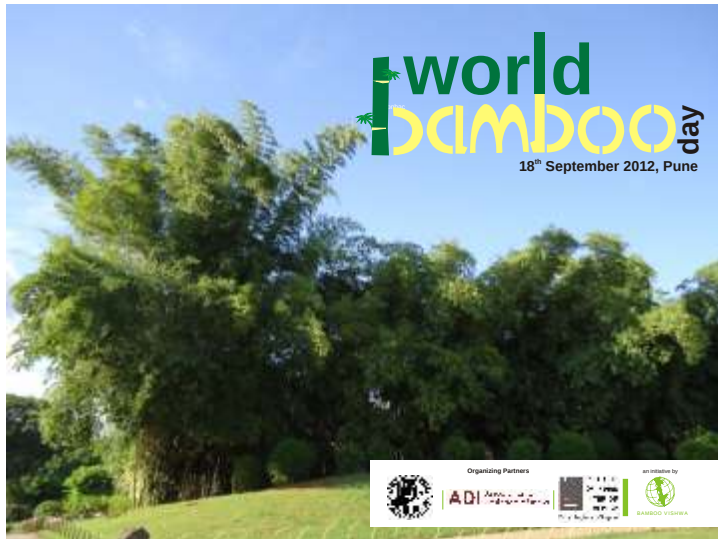


We are pleased to bring to you this edition of 'Bamboomitra' jointly by Bamboo Vishwa and South Asia Bamboo Foundation and supported by World Bamboo Organisation (WBO). One of the foremost tasks of the newsletter is to bring together people with different backgrounds and experiences. We are confident that with your support and active participation, we can jointly succeed in helping the bamboo sector reach its full potential, share our knowledge, network and promote bamboo. In our continual efforts in this direction we present to you this edition on the occasion of World Environment Day !

- Editorial Board

Nachiket Thakur, Bamboo Vishwa & Kamesh Salam, SABF



Momentoes



Flute recital by Pandit Nagarju at inauguration

World Bamboo Day was celebrated on 18th September 2012 with grand event organised by Bamboo wishwa along with ADI, (Association of Designers of India) and IIID (Institute of Indian Interior Designers) PCERF (Pune Construction Engineers & Research Forum) at ICC Towers, Pune. An interactive talk by Designer Rebecca Reubens of Rizomes, Ahemedabad was organised on the occasion. An exhibition showcasing various applications of bamboo was also put up. A student competition titled "Bamboo - Design for Sustainability" was announced.



Exhibition



Rebecca shared her journey with Bamboo and her products



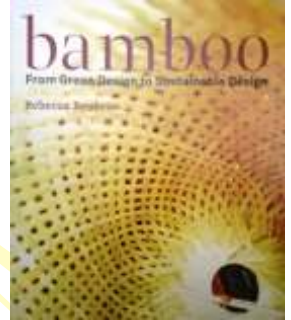
Organising team from Bamboo Vishwa, IIID, ADI, PCERF along with Rebecca

Compiled by Nachiket Thakur

Bamboo Design for Sustainability - Furniture competition winners

Bamboo Design for sustainability - furniture design competition was conducted by Bamboo Vishwa and Institute of Indian Interior Designers, Pune Regional Chapter. The competition entries were evaluated by eminent jury comprising of Rajeev Shah, IIID Pune regional chapter, Hemant Mahajan, IIID Pune regional chapter, Jayant Dharap, Landscape Architect, Bala Mahajan, Association of Designers of India, Nachiket Thakur, Bamboo Vishwa.

The awards were given at a IIID Master series function on 6th of May 2013 at Ishanya, Pune. The award consisted of a citation, cash prize and a book "Bamboo - From Green Design to Sustainable Design" by Rebecca Reubens



First Prize



Ar. Rohan Chavan & Ar Supriya Krishnan, Pune

Second Prize



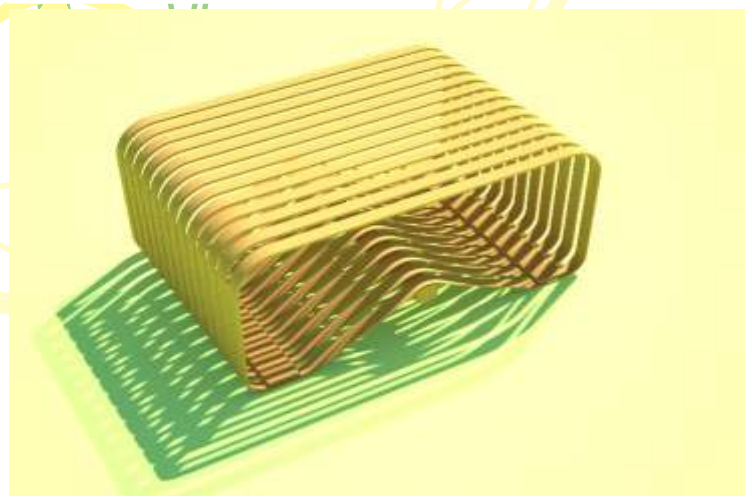
Ar. Madhankumar, Bangalore

Third Prize



Ar. Komal Potdar, Pune

Commendation



Ms. Pooja Ahuja & Mr. Akshay Khandalkar, Pune

Rural Toilet module

Government of India has been focusing on providing better sanitation facility to the majority of the rural population across the country. Major challenge is to make available the Toilet blocks at economical costs, using local materials and generating employment opportunities.

To cater to this urgent need for the masses, I set forth to develop a toilet module enclosure using a judicious mix of local material-bamboo, bagas board, advanced polymer concrete and innovative manufacturing & assembly technique. I believe this will emerge as a viable option for the sanitation needs of our rural folks.

The project is in conceptualisation phase and one proof of concept prototype has been erected near Pune. The target cost for the Toilet module is set at Rs 7,500. We hope to develop this further with a pilot project soon.

Conceptualised & developed by Nachiket Thakur
Supported by : Mahindra Composites Ltd, Pune



Bagas Chip Board



Door Panels : 6ft x 1.5 ft
Bagas Chip Board + Fiber
Reinforced composite



Wall Panels : 4ft x 2 ft
Bagas Chip Board +polymer
cement composite



Structure :
Bamboo Reinforced Cement (MgO)

The Sesa Goa Bamboo Pavilion



When a unique & apt concept for an exhibition hall at the Sanquelim mines was sought for, by Sesa Goa, none other solution suited the requirement better than bamboo as the medium for the pavilion. The concept created by KONBAC when presented surpassed all expectations by displaying a grand form and expanse of space as a fit premise to present all the successful environmental rejuvenation efforts of Sesa Goa.

Created to be a permanent exhibit, the imposing central 'A' frame bamboo columns shows its true capacity when its extended skeletal wings cuddle the first floor in both its outstretched arms circling its periphery, leaving an imposing 2 storey central space open as an atrium. The bamboo pavilion is built with approximately 6000 bamboo poles of handpicked *Dendrocalamus Stocksii* from a stock of around 15000 bamboos for such large format bamboo construction. The entire space plan leaving the ground floor area of 1500 square feet as the main exhibit hall displaying the grand images onto the series of the central 'A' frame with the staircase leading to the peripheral first floor admeasuring a 1400 square feet area presenting the continuation of the ground floor display was custom designed & planned for a subject deserving a truly grand display indeed.

Bamboo is one of the frontrunners of environmental rejuvenation due to its high oxygen emitting capacities and also for its ability to capture more carbon from the environment and converting it into biomass in its body. It's the fastest growing amongst all other woody plants. Its capability to rejuvenate itself without being planted is most advantages because by cutting bamboo one encourages the growth of new ones which grows to its fullest height in 60 days compared to the woody plants which take 60 years.

Bamboo known for its high tensile strengths comparable with steel, is a traditionally used material since ancient times given a new life by the joint efforts of INBAR International Network of Bamboo & Rattan & its daughter organisation KONBAC Konkan Bamboo & Cane Development Centre in India.



The Sesa Goa Bamboo Pavilion

When completed in all its grand glory, it would be truly a culmination of all the 5 years of toil that KONBAC has endured. With humble beginnings of having been formed to create sustainable livelihood for the local communities by conducting training programs in bamboo crafts in and around Sindhudurg to a journey onto creating exquisite crafts products, to the much sought for bamboo furniture's and graduating to designing and implementing light bamboo structures and the ambitious exploration into large bamboo structures successfully is truly an achievement which is still awaiting its deserved recognition for this humble grass & the team of rural bamboo craftsmen & women comprising the backbone of the organisation.

Add to that, the unknown and unpublicized fact that KONBAC uniquely holds the worldwide achievement of building large bamboo structures comprising 3000 square feet with small diameter bamboo measuring up to 50mm only. It is clearly evident that the small diameter of the local variety of *Dendrocalamus Stocksii* is a material awaiting endless possibilities for the future of bamboo construction in India. The concept which had been visualized by KONBAC's design team was well translated into a most innovative structurally stable bamboo structure by a well experienced structural designer is the skeleton of the bamboo pavilion. The outdoor wall which was painstakingly assembled by stacking whole bamboo culms is a well insulated external wall cladded with an asbestos free cement sheet to have a conventional painted white interior wall works as a proper backdrop for the exhibits. Recycled timber was another material aptly specified for its doors, windows and the flooring of the first floor. The assembly is achieved by an array of unassuming bamboo pegs of various diameters & stainless steel fixtures.

All this work would not have been possible without the core team comprising of around 40 artisans with a wide variety of skill sets sieved from around 2000 trained artisans from the past 4 years of training programs managed & conducted by KONBAC, toiling days and nights under the able guidance of the engineer, supervisors support system to ensure that every plan, detail, change, modification, redesign was implemented through all THE painstaking transitions. The cohesive team work was effective in managing the evolution of the concept drawing to the life size grand bamboo pavilion. The able support of management & the patience of the Sesa Goa team spearheading the project have indeed been responsible in creating a landmark for both the organisations.

Mr. Mahesh Patil

Associate Vice President HSEC, Sesa Goa Limited, Goa



Environmental and Economic sustainability through Bamboo

Jhadol is the second poorest block of Udaipur district. The block has an overwhelming tribal population and a vast forest cover. Large quantities of Bamboo plantations of *Dendrocalamus Strictus* are abundantly available in Jhadol. Department of forest had started a livelihood programme for members of Kathodia tribe community, one of the poorest tribes in state of Rajasthan. The project was manufacturing of incense sticks using Bamboo. A research indicated that designing the right product from the local species of Bamboo would hold the success to a sustainable project.

Today Maitreya Rural Growth Venture(MRGV), an Impact investment venture from Maitreya group, Department of Forest, KONBAC and ICICI Foundation are working to make the unit one of Rajasthan's first development projects which actually implements a 'Hub and Spoke' model with a hub unit assembling and manufacturing bamboo furniture products and multiple spoke ancillary units run by women SHGs in Jhadol block of Udaipur district.

The project started with community mobilization. Community meetings and visits to individual households was conducted to select candidates from different sectors. A balance of youth and elder experience was maintained in the batch. Department of forest set up a special training room . A treatment tank was built in the range premises to treat Bamboo. Farmers from nearby villages started supplying needed Bamboo for the training. Within 5 months the training program was complete with an attrition rate of only 4 %. MRGV works to provide financial, Market development and technical assistance to social enterprise projects which are non bankable and face hurdles in attracting investments Maitreya brought in its entrepreneurial expertise to build a business plan for the enterprise where the project would run as a factory unit with the trained artisans will work and earn as per their performance and capabilities. .



Production Shop



Furniture manufactured at the facility

Focus was on building HR, Marketing and Quality systems to make the products marketable. A central hub has been set up where 37 artisans including 6 women candidates get full time employment in manufacturing and assembling furniture components. Small components like nuts, nails etc were outsourced to women SHGs which acted like spokes to the central hub providing livelihood. 350 farmers have been impacted by price which is double the market rates for the Bamboo poles. Bamboo is suddenly in news in Jhadol. The Bamboo clump which was a "trouble" for farmers is now a prices asset. The Jhadol block had seen massive uprooting of Bamboo clumps as farmers never got good price for the material.



Handing over of project by Subrat Mukharji, President ICICI Foundation to Varsha Satpalkar Chairman Maitreya rural Growth

The Jhadol Bamboo Unit has elevated the status of Bamboo in minds of villagers. The unit daily sees stream of villagers from nook corners coming to sell their Bamboo as a raw material. The department of forest is now working with MRGV and KONBAC to promote Bamboo plantations of good species. The project has directly impacted 400 community members and the number is increasing with MRGV and Native KONBAC scaling the enterprise with market linkages.

Gurudutt Shenoy,
VP Maitreya Rural Growth

Labour of love in bamboo : Do-it-yourself bi-cycle kit



I stayed too close to my school to be able to convince my parents to get me a bicycle. Additional coaching classes in my final year in school proved to be the lucky break. Now I was a 15 year old with a new bicycle. I was old enough to venture out alone and discover Mumbai. Over the years the rides started getting longer and longer - 10, 20 ... 80 kilometre. 20 years later I had graduated to doing week long tours covering upwards of 500 kilometres. I very obviously was in love with cycling. Could I claim to be in love with my bicycle? Definitely no. I was onto my 4th bicycle. I had turned a serial bicyclizer. I wonder, why?

The more I rode, the longer I rode, the more I started valuing build quality, ride comfort, etc. Shortcomings in the current bicycle became obvious, Upward economic mobility let me switch from a single speed steel frame to a 10 speed steel frame to a 18 speed aluminium alloy frame to a 24 speed importex aluminium alloy frame. After a while every latest ride still it wasn't good enough.

Though India is one of the largest manufacturer of bicycles, the market for quality bicycles is nascent. Frame sizes and other options aren't always available or in stock. This led me to research bicycle frame geometry, sizes, etc. The best solution seemed to be custom bicycle frames. Further research suggested bamboo as a viable alternative to steel for building bicycles. Bamboo has so many positives : it is abundantly available, light, strong as steel, environment friendly, stiff, dampens vibrations, etc. Working with steel would need a lot of specialized tools and technical skills. A bamboo bicycle on the other hand looked like an art and craft class. It could be glued with suitable epoxy adhesives, the joints reinforced with natural fibre composite. It felt like an easy Do It Yourself (DIY) project which didn't need too many skills and hardware tools.

A bicycle is a clean, efficient and very environment friendly mode of transport. Using a natural and very environment friendly material like bamboo to build a bicycle frame could potentially transform cycling from cool to ubercool. It was now an easy decision to build myself a custom bamboo bicycle.

In developed countries all you need to do is : get online, place an order and get started once the raw materials are delivered. You have businesses which cater exclusively to such hobbyists.

For a hobbyist in India it is daunting to find answers to the following questions : Which bamboo do I use? Has it been harvested at the right time? Has it been treated? Which epoxy adhesive is suitable? Where can I buy carbon fibre? Who will sell epoxy adhesive and carbon fibre in quantities suitable for a hobbyist? How and where do I make a jig to build the bicycle frame? Where do I get the basic tools to work with bamboo? Where do I source the quality components to build up the frame to a complete bicycle?

18 months and many bottlenecks later, I have 2 bicycles ready. It has been a steep learning curve. It definitely didn't turn out to be an easy project. As I slowly progressed with the project, a few friends evinced interest in a bamboo bicycle frame. They weren't interested in getting one made by me. They wanted to build it themselves. That is when the penny dropped. The DIY frame is the result of one's labour of love. You had to love the resultant bicycle.

For over 10 years, in the Open Source IT. It is in my ethos that all knowledge belongs to the public domain and is to be shared with the world. The standard approach would have been to document everything and make it available on the internet. This would get eyeballs. How many of these eyeballs would end up building a custom bicycle? Not many. I reasoned, if I could suitably lower the barrier to entry, other hobbyists would be more willing to embrace the DIY culture. Bamboo bicycle building workshops would provide the raw materials, tools, instructions and knowledge. So my idea is that people walk into a workshop, over a couple of days transform a design from paper to a comfortable custom bamboo bicycle and ride out on the labour of your love.

Vinu K, Pune

Bamboos in Sahyadri : need for further studies.

The review of the study of bamboo in Western Ghats shows that bamboo has been studied in intensely in Kerala, Karnataka. But there are scanty references of bamboo research as far as upper portion of western ghats (comprising Goa, Maharashtra and Gujrat. There are four cultivated bamboos occur mainly in all three states along with other ornamental varieties. These are *Bambusa bamboos*, *Dendrocalamus strictus*, *Pseudoxynthera stocksii* and *P.ritchyji*. Few references quote occurrence of other varieties like *Gigantochloea* but no authentic occurrence sites are quoted anywhere. Out of these varieties *B. Bamboos* is flowering throughout Maharashtra for last 3-4 years. There seems that no systematic efforts are being made for the collection of seeds of this variety. If it will not addressed, there is a fear that the variety once abundantly available throughout western ghats may become rare or may need to include in red list.

I have visited several places in Ratnagiri, Raigad, Thane, Pune, Satara and Kolhapur and collected the seeds, but was unable to get viable seeds. Forest department know much more places where the viable seed may be available. Hence it is necessary to undertake the campaign to restore the occurrence of *B.bamboos*

In case of *Dendrocalamus strictus*, a varsitile variety occurring in almost in all states and climates from Himalayas to kanyakumari and the high rainfall areas to scarcity/draught prone areas. It may flower within next two three years. At many places in Raigad, Ratnagiri, Satara, Pune where it is grown on commercial scales, started declining or harvested in reduced quantity. If the life cycle of 40 years is considered this shows that by 2016-2017, it may flower and then it may face the situation like that of *B.Bamboos*.



As it is available throughout India and also famous for sporadic flowering and not the prolific flowering, it is possible to cultivate it again from the seeds available in next two years. These seeds should be used for propogation by cultivating sapplings for the same. *D.strictus* is growing under various climatic , edifice conditions. Even though maximum research has been done on this species but till today very few attempts are made to study the response of *D.strictus* to various climates and soils.

Today people use it for varied purposes, but systematic attempts required to be made for the study of variations of various characters like fibre quality, cellulose qty, strength, anatomical variations, variations in morphology . Lot of facilities are provided to various colleges and university departments. This may become good topic for some students doctoral research.

The other two species *Pseudoxynthera stocksii* and *P.ritcheyji* are also neglected for reasearch. These two species are abundantly growing in 7 districts of Maharashtra (Thane, Raigad, Ratnagiri, Sindhudurg, Pune, Satara & Kolhapur) and Goa. The various characters enumerated mentioned by various researchers like Seethalxmi and others needs to be verified at micro levels. These can be verified at various levels as the two sps especially *P. stocksii* is producing the viable seeds very rarely, there are definite chances of mutants formed under different conditions of microclimate and soil types. In Velha taluka of Pune, which has *P.stocksii* as a dominant species, is being studied by me and my team. Sahydri or Western Ghat is providing a good tool to study the variations in characters of lot of flowering plants. Bamboo is one of them, hence there are chances of occurrence of mutants or new sub species.

Till today there is no authentic version of agronomic recommendations of all these important species. If we wish to expand the area under bamboo cultivation, homestead bamboo is definitely an answer. To promote bamboo as a cash crop we need to give the definite agronomic practices for all the varieties. All four agricultural universities have bamboo in their areas. Now it is hightime to make some proposals of bamboo agronomic studies and put forward to various agencies like Bamboo mission. The farmers will be happy to receive such authentic package and practices. It is a need of the hour to study bamboo of Sahydri in all aspects. We will be happy to associate with any such studies.

Hemant Bedekar
Bamboovishwa, Pune

Visit to Katlamara

Bamboo Vishwa team comprising of Mr Ajit Thakur and Mr Rajendra Sapkal embarked on a journey of self discovery to Katlamara near Agartala in Tripura. They made this pilgrimage to the land of bamboos from 10th March to 14th March 2013. This area is touching Bangladesh with Begali as its main language and rice as the prime food. People in the region are hard working and content.



Katlamara Cluster

Katlamara Cluster falls under Tripura State in West Tripura district. The katlamara cluster is able to form 103 plus Artisans & 9 SHGs supporting the strong work force.

Cane and Bamboo

From time immemorial Tripura has carved out a name for itself in the field of Handicrafts. The Gifted artisans produce wonderful objects of crafts from simple material like cane, bamboo & wood. Their rare artistic skill has not been streamlined in the manufacture of exquisite household pieces. Tripura's unique topography and the gracious nature bestowed their choicest blessings on the hereditary artisans.

Cane & Bamboo occupy a distinctive place in the life of Tripura. From cradle to grave, there is hardly any occasion, complete without the use of cane & bamboo. Today the magnificent skill of artisans has been directed to produce of a wide range of more than 200 exquisite products. Presently, about 10,000 skilled artisans are engaged in production of various handicrafts in the state.

Cane/ Bamboo handicrafts of Tripura are acknowledged to be among the best in the country, due to their beauty, elegance and exquisite designs. A vast range of items are produced, including Furniture, Panels and Partitions, Table & other Mat products, Lamp Shades etc.

Visit highlights :

- A. *T Oliveri*, *B Polymorpha* & *B Pallida* are mainly cultivated which are useful varieties for the bamboo industry of the region.
- B. Forest research center at Gandhigram has 19 varieties of bamboo.
- C. Maturity marking also has been practised here.
- D. Bamboo & Cane Development Institute offers Post Graduate Diploma in industrial bamboo products.
- E. The team also visited various manufacturing centers for handicrafts and furnitures
- F. Many plantation sites were explored

'Bamboo Vishwa' hoisted the flag at one more destination !



Ajeet Thakur
Organiser Nursery, Pune

Contemporary products in bamboo



The name 'Bambooded' originated from the idea of amalgamating a natural substance with modern materials in product design. It represents the idea that, if a problem is solved using bamboo or its derivatives then its solution has been 'bamboo'ed. We created our products to show our love for the material that we know is adored by all. Right now we are a team of like-minded industrial designers motivated by the versatility of this incredible material. We wish to showcase what could be achieved through this simple yet capable material and build a series of products that can compete with those in the mainstream. Our focus is to use bamboo and its derivatives with other modern materials such that they symbiotically fuse together to create unique and functional lifestyle products. We wish to bring bamboo to the world of product design as a viable and modern material.

Positioning bamboo and other such natural raw materials into the context of modern product design is the need of the hour. The increasing popularity of bamboo products provides an opportunity for diverse cultures to settle their difference through trade and cooperation that benefits everyone. The demand of wood and timber can be directly transferred into that of bamboo, thus the current known demand has a huge scope for growth.

The idea behind Bambooded is to transform the craft based skill into a feasible manufacturing based skill and help the artisans to evolve into new age bamboo technologists. The aim is to advance the field of bamboo research and transform it into a viable modern material and showcase the ability of bamboo product design using artisan's help and application of research.

Bamboo being sustainable and having various strengths and properties, enables us to create diverse designs, solve numerous problems and allot numerous properties to the product, yet it also stops us from going over the top with our design ideas and keeps us on the ground.

- Uttam Banerjee,
bambooded, Mumbai & Kolkata



Connecting two worlds with bamboo : Bridge in Bangalore



Wonder Grass, Bangalore has recently finished building a bamboo bridge which is 160 ft long and 8 ft wide with a clear span (unsupported length) of 80 ft in the center.

The bridge is designed for pedestrian, light vehicles like bicycle and mopeds. The bridge was formally inaugurated on 1st October 2012. The visitors and onlookers have given rave reviews. This marks a new beginning for us at Wonder Grass. The journey, which started with lot of doubt, uncertainty about our ability to handle the challenge, finally saw the light of the day. The whole bridge from start to finish, conceiving, designing, prototyping was completed in 4 months. The team was instrumental in getting this right, everyone participated, specially the artisans, with their minds fighting the hidden doubt but their enthusiasm to make something like this work finally made this happen.

The clients were very supportive and helping. Mr B L Manjunath structural engineer was enthused with the idea itself, and his confidence actually made us believe that we can build a structure of this scale.



Vaibhav Kale
Wonder Grass, Bangalore

Visit to INBAR, Beijing, CHINA in December 2013



Nachiket Thakur, Bamboo Vishwa, Pune

Mathematical Bridge in Bamboo

The Mathematical Bridge is the popular name of a wooden footbridge across the River Cam in Cambridge, UK. The bridge was designed



By William Etheridge, and built by James Essex in 1749. The arrangement of timbers is a series of tangents that describe the arc of the bridge, with radial members to tie the tangents together and triangulate the structure, making it rigid and self supporting. This type of structure, technically tangent and radial trussing, is an efficient structural use of timber.

Aim of this project is to adapt the design of the mathematical bridge for purpose of low cost bridge spanning 22 ft length, and width of 5ft, able to carry non-vehicular traffic of about 1000 Kg (appx 15 people) at a time.

Design:

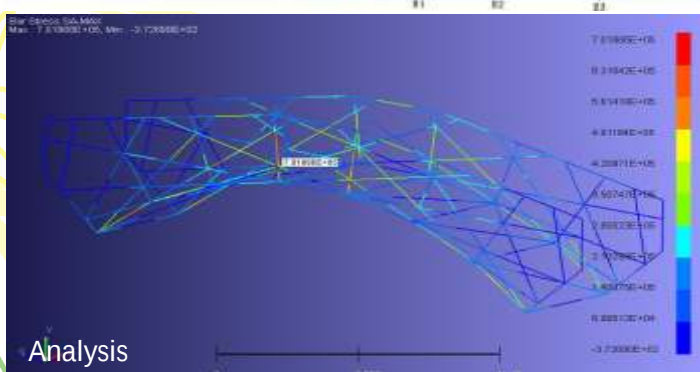
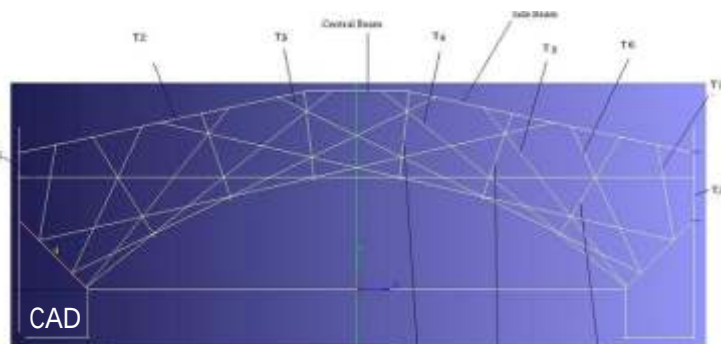
Load bearing frame of the bridge is composed of the Tangent beams, Balusters, Handrails and Cross beams. The walkway is supported over the Crossbeams which in turn transfer the load to the Balusters and then on to the Tangent beams. The beams are classified as Tangent Beams (T1-T8), Balusters (B1-B3) and HandRail (Central and Side Beam). The Tangent Beams (T2-T8) are repeated for the symmetric half as are the Balusters. It has span length of 22 ft width of 5ft and a baluster height of 3.5 ft. For this bridge the radius of the tangent circle works out to 15.5563 ft, with an included angle of 90 degrees.

FEA Simulation:

Mechanical properties considered for analysis

1. Density of bamboo: 600 kg/m^3
2. Young's Modules: $1.338 \times 10^9 \text{ N/ft}^2$ ($14,400 \text{ N/mm}^2$)*
3. Allowable stress: $1.115 \times 10^6 \text{ N/ft}^2$ (12 N/mm^2)*
4. Radius of bamboo: 1 inch (25.4 mm)
5. Analysis units: Length: ft, Force: N

Analysis was conducted for 1000kgs, 2000kgs, 4000kgs



Construction:

The bridge front view was drawn on a flat ground in 1:1 scale. Bamboo of appropriate size were connected using 8mm nut-bolts. These frames were then placed in the foundation, and the bamboo cross beams connected by nut-bolts in place. Finally a bamboo walkway was placed on the frame and bolted to cross beams. Then the foundation was finished in brick and mortar and left to set for 3-4 days

Testing

Bridge has been physically tested for 1050 Kg and is proven safe, simulation also shows that the bridge will safely bear 1000 Kg load before yield.

Shrinivas Khare & Ashish Kelkar,
Shree Bhargav Fibers, Pune



Making Bamboo work for forest dwellers

Bamboo also known as Green Gold has 1500 documented uses and occupies 12.8% of the total area under forests in India. It has enormous potential for employment generation, industrial use & environmental benefits as documented by the Planning Commission. For the 12th Plan, the sub-group working on NTFP (Non Timber Forest Produce which includes Bamboo) and their sustainable management, estimated that 275 million poor rural people in India~ 23% of the total population depend on NTFPs for at least part of their subsistence and cash livelihoods. This dependency is particularly intense for half of India's 89 million tribal people, the most disadvantaged section of society, who live in forest fringe areas.

However, because it is governed by a complex web of forestry laws and policies, there are serious restrictions on the cultivation, harvesting and transportation of Bamboo in particular and NTFP in general. As a result the numerous industrial uses and environmental benefits of Bamboo lie unexplored apart from the huge employment potential that remains untapped. In addition to the employment, industrial & environmental benefits that are crippled by the regulatory restrictions, the case for this bill is strengthened by the following:

A. Consistency with the scientific categorisation of Bamboo:

1. The definition in the Indian Forest Act (1927) (IFA) of Bamboo as a tree defies the taxonomic categorisation of Bamboo as a grass. Bamboo is scientifically recognised as a grass belonging to the *Poaceae* family (the same family that wheat, maize and millets for example belong to!).

2. The Ministry of Environment & Forests acknowledges this in its Annual Report for 2011-12 where there are references to Bamboo as flora and to its categorisation as non-timber forest produce.

B. Consistency with other Laws:

1. The categorisation of bamboo as grass and not timber is recognised in the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (FRA) but remains to be corrected in the IFA.

2. The Supreme Court too, in a clarification on its orders dated 12.12.1996 in *T.N. Godavarman Thirumulkpad vs Union of India*, has said the orders "does not cover minor forest produce, including Bamboo etc." Here, Bamboo is considered a minor forest produce.

3. The Hon Standing Committee on Science & Technology, Environment & Forests has observed the pressing need for amendments to the IFA in its report submitted in November 2012 specifically on the need to amend the colonial spirit of 'monopolizing forest resources to harness maximum revenue to the detriment of forest dwellers. It underscores that the IFA in its current form should be 'harmonised' with the FRA.

4. The sub-group of the Planning Commission that worked on NTFP and their sustainable management for the 12th plan has also noted this gap at the policy level and the inconsistencies between the FRA and IFA.

5. The former Minister of Environment & Forests Mr. Jairam Ramesh, in his letter dated 21st March 2011 to Chief Ministers, too has declared that Bamboo needs to be treated as Minor Forest Produce.

There is little to justify the unfair burden of bureaucratic hurdles that are placed on Bamboo today due to its categorisation as timber. These hurdles stand in the way millions of Indians exercising their right to earn a livelihood and in us as a country reaping the industrial and environmental benefits that lie untapped in this industry. There is an urgent need to remove the regulatory restrictions either through required amendments to the IFA and the various State-level Acts in this area or setup an NTFP Promotion board as has also been suggested by the Planning Commission to focus on fully realising the potential of this valuable sector.

Note : A detail Report by the Standing Committee on Science & Technology, Environment & Forests on need for amendments to the Indian Forest Act (1927) also elaborates this issue

Kamesh Salam,
SABF

Interesting Snippets



Ajeet Thakur with D. Gigantious - 22 years young
Forest Research Institute Dehradun
Dia : 300mm , Ht : 100 ft, Internode distance : 450 mm



Bamboo 'Diya' holder used by devotees for making offerings
to the Narmada River
Contributed by
Pankaj Arora, Bamboo Initiative Foundation, Haryana

Dear Bamboomitra's

Please send in your comments, suggestions on this issue. We would also like to get your views, experiences, work related to bamboo to be published in our next issue or our website. This is your platform to interact with like minded bamboo enthusiasts. Let us create this vibrant community to try and make a noticeable difference to the environment and society at large.

Contact us on bamboovishwa@yahoo.com & 9890909299

Bamboomitra Editorial and Publishing Board
Nachiket Thakur, **Bamboo Vishwa** & Kamesh Salam, **South Asian Bamboo Foundation**

The views, information expressed in this news letter is of the individual author's and the publishers may not agree or support the

visit us at www.bamboovishwa.com