



Cottage terrace with bamboo furniture



Bamboo Cottage

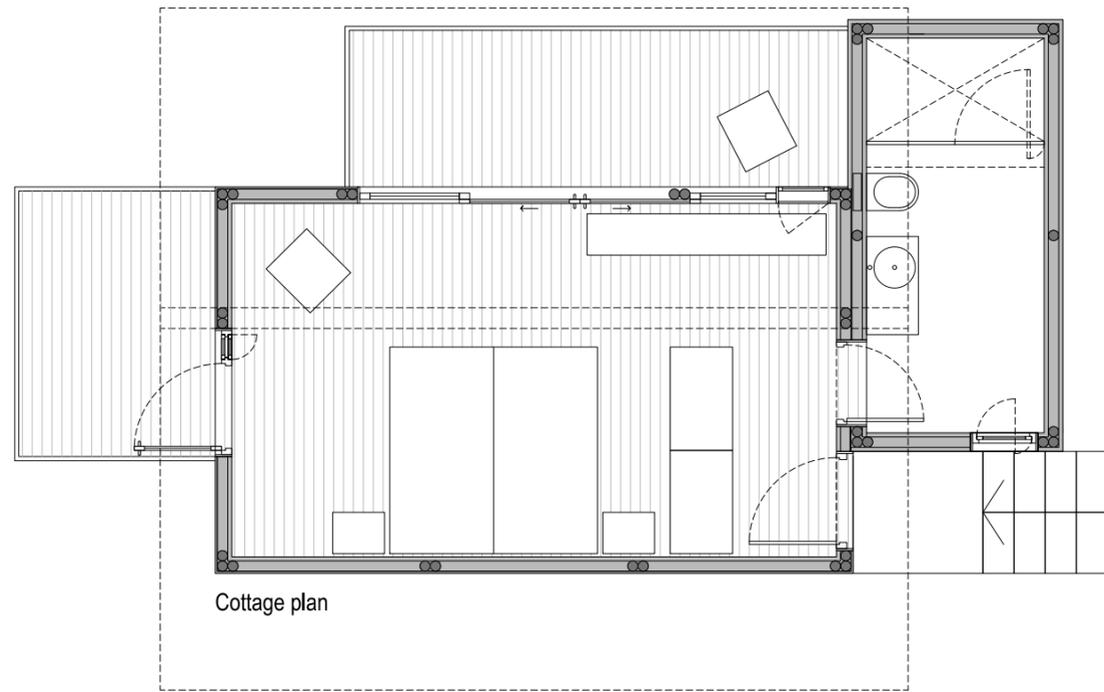
URAVU - THE SPRING OF 'GREEN GOLD'

Text : Team Design Detail / Photos : Uravu Eco Links

Initiated by a group of individuals who were seeking alternative ways of living where social consciousness and sustainable economic and political involvement were essential complements of daily life, URAVU is a non-governmental organization working in Thrikkaipetta village in Wayanad district of Kerala. The network now comprises of the Uravu Indigenous Science & Technology

Study Centre, a non-profit trust; Uravu Eco Links Ltd., implementing and marketing company; Kalpetta Bamboo Cluster Producers' Association, a society of artisans and Uravu Bamboo Village, a community collective in the village.

Working with local people, the government and businesses, they promote the use of bamboo in everyday life through focused



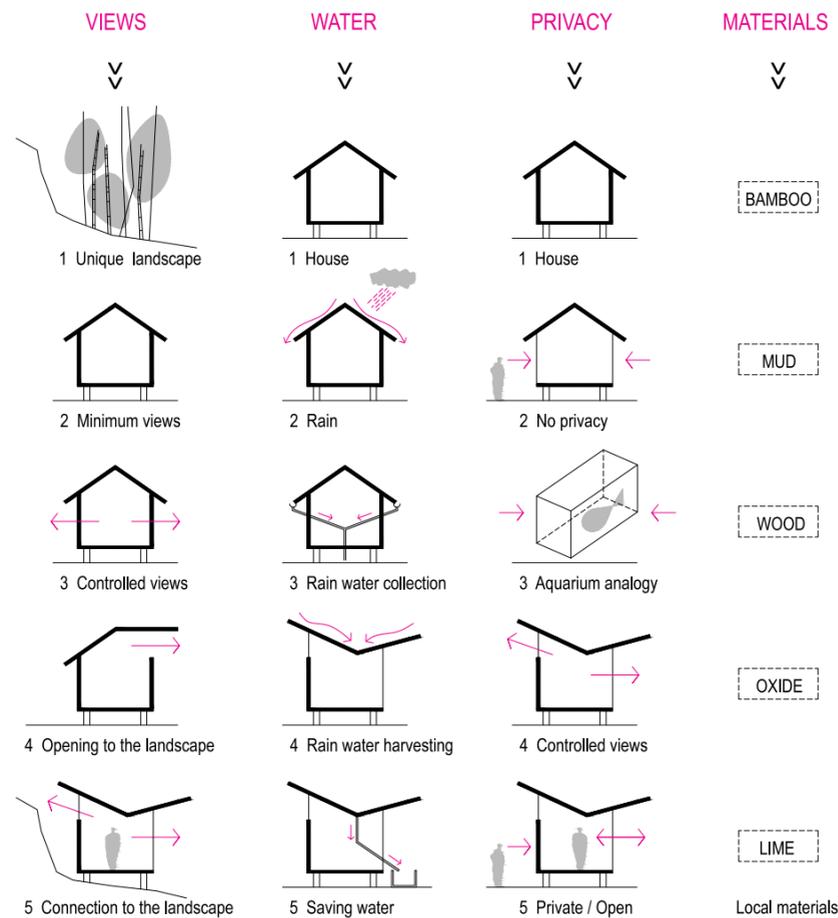
end-to-end programmes in the bamboo sector. A Bamboo Nursery with over 40 species, a Common Facilities Centre to link the micro-enterprises and a Resource Centre conducting training programmes and research on products and processes of bamboo are the critical compartments of the system. This cost-effective bamboo industry has become a means of employment and income for the rural women and encourages the cultivation of bamboo for its environmental and economic benefits. Currently around 150 local people work in 20 craft micro-units, with a large number of them being women.

A green building is one which uses less water, optimises energy efficiency, conserves natural resources, generates less waste and provides healthier spaces for its occupants, as compared to a conventional building. Bamboo buildings, furniture, lamps and blinds are the icons of their innovations.

Bamboo Construction: Uravu Eco Links Ltd. led by Managing Director Sivaraj Thekkayil and Er. Muhammed Sadique Kallada works closely with diverse partners like Prof. Juerg Grunder and his team from IN:CH architects + planners, civil engineer P.J. George from Padavu Builders, Saikrishna and Sunil from a construction management company.

Uravu Bamboo Grove Resort:

An eco-friendly community tourism project, the resort is a standing revelation of homespun designs and proof to their resilience and efficiency. A spectacular combination of local and international knowledge and the involvement of local people resulted in the creation of this golden edifice near Kalpetta, 12 km from Soochipara Falls.

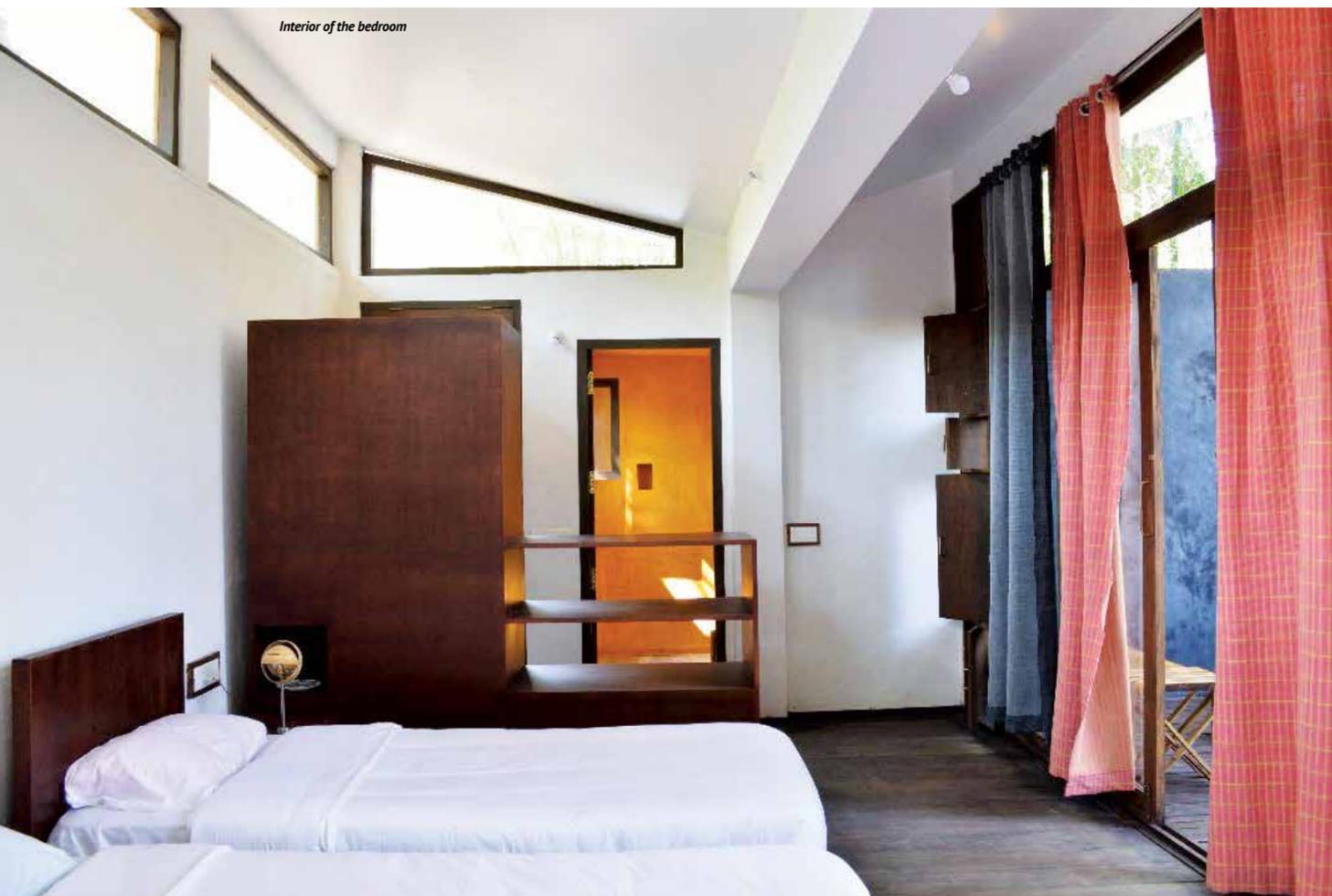
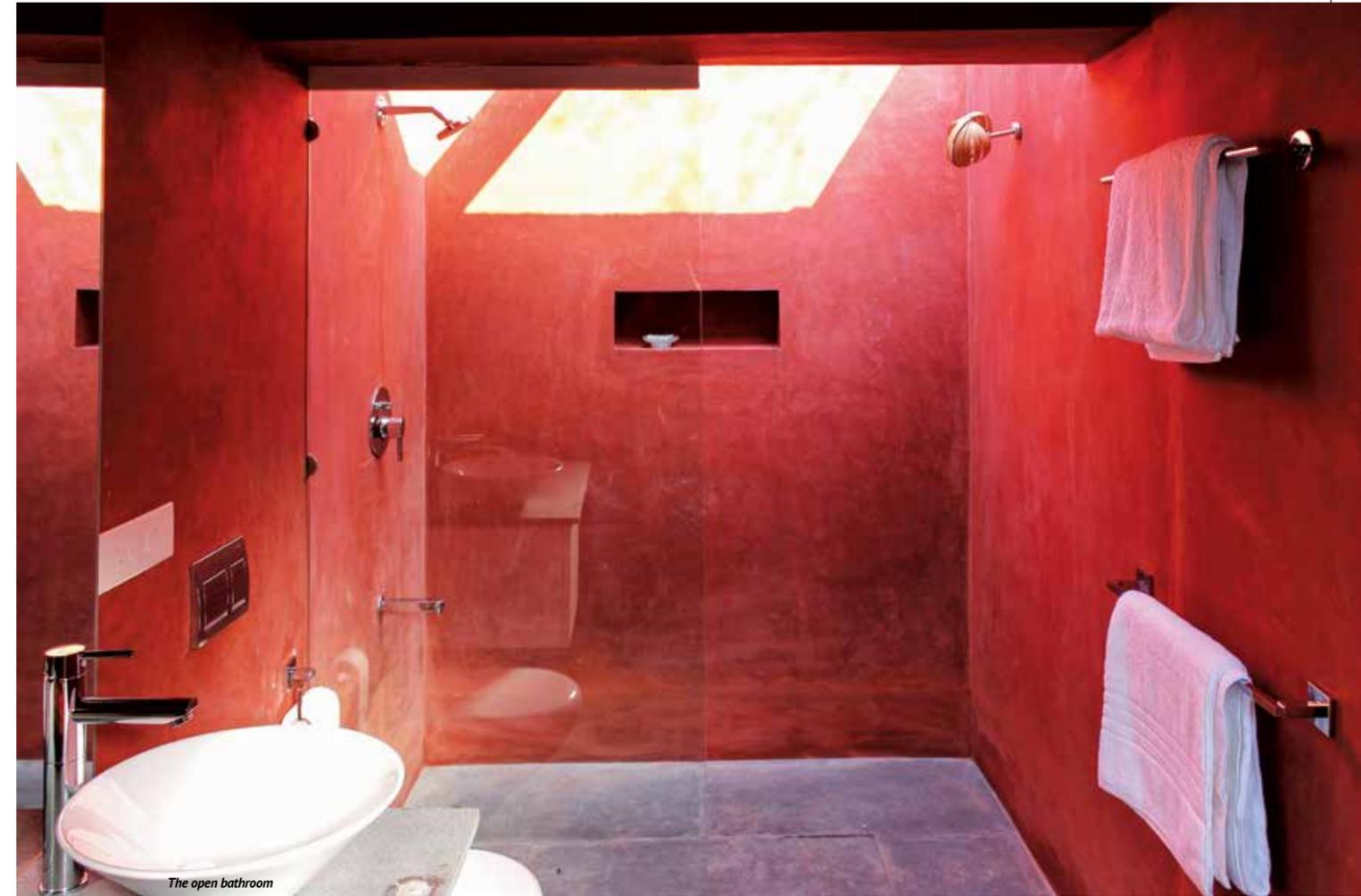
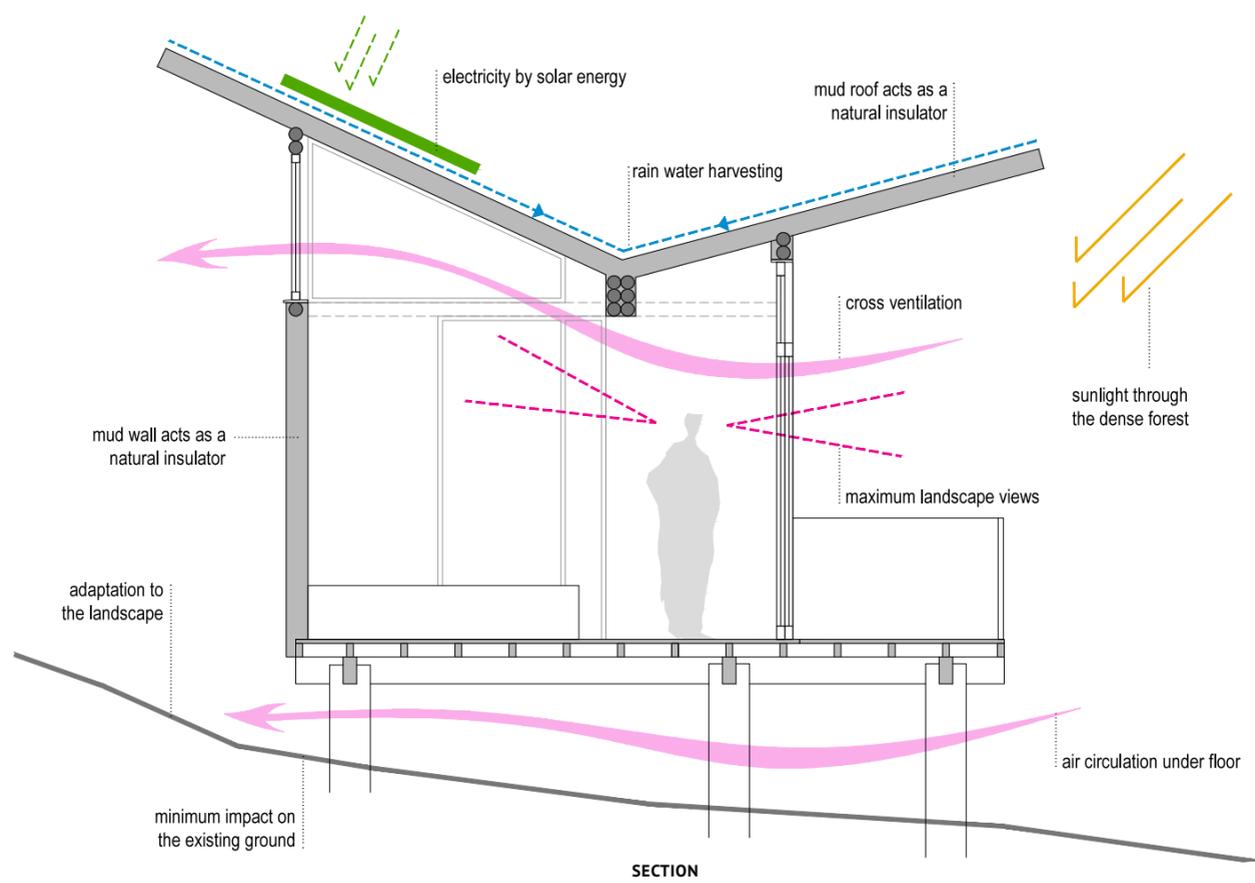


Crucial roles were played by IN:CH architects + planners who developed a holistic design concept and Er. P.J. George whose knowledge of the local conditions and experience in construction with bamboo were essential to implement the concepts. Different building materials were experimented with and the best ones were utilized.

Uravu Eco Links was the investor and builder: being the contractor with the management part. Juerg Grunder and his team from IN:CH developed the master plan, architectural design of cottages, design of furniture, lamps, textiles and landscaping. They worked in close cooperation with structural engineers P.J. George, Saikrishna and Sunil, artisans, water-management specialists and artists.

While workshops and close interaction helped in learning and sharing with each other, it also created an ecologically and environmentally viable and perfect resort. The architects, for example, analysed the housing typologies and learned about the workers' competences and skills. Being specialists, Uravu's artisans helped to develop new techniques for the use of bamboo and were involved heavily in the development of furniture and lamps in line with the interior design concept of the resort.

Locally available materials like bamboo, areca nut and mud were employed in the design.





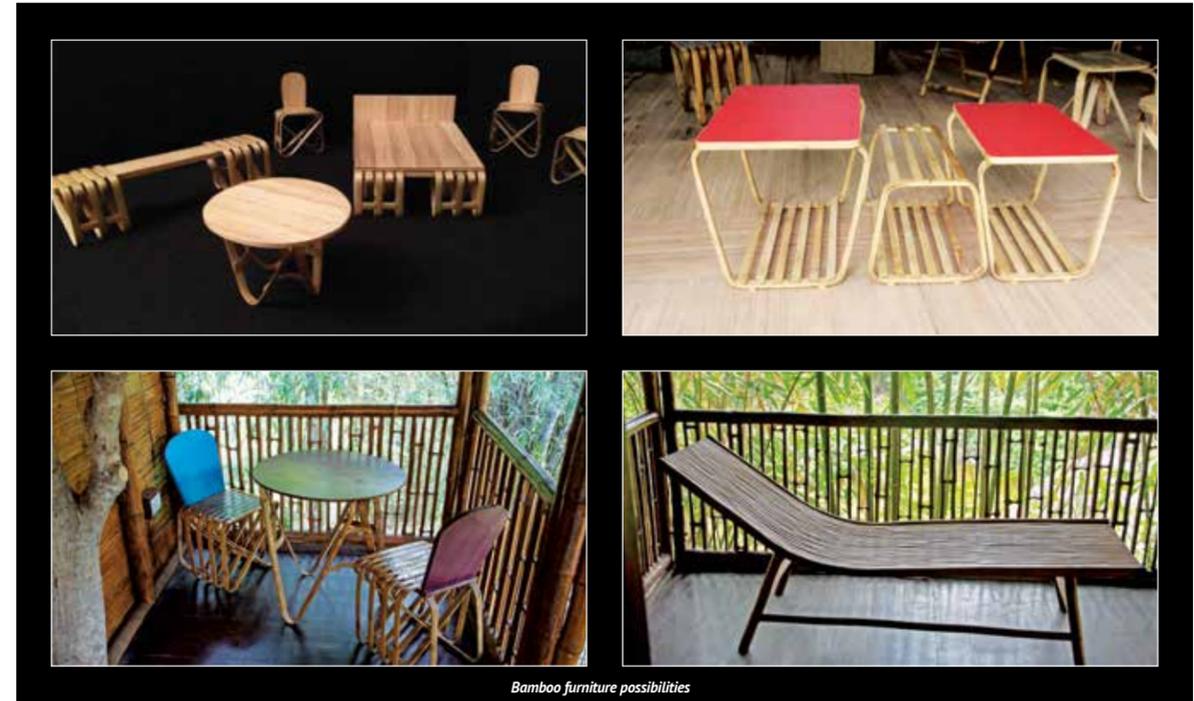
Glimpse of group discussion and workshop

The walls were plastered with mud and given a coating of eco-friendly mud-based paints. Rooms with private balconies that are adorned with bamboo artefacts make this a valuable experience for tourists.

Bamboo Log project

A movement more than a project, this was a two year plan (2015-17) conducted by URAVU in association with India Habitat Forum (INHAF), IN:CH architects + planners, Er. P.J George and Er. Saikrishna and Er. Sunil. The primary objective was to demonstrate the versatility in strength, durability, workability, cost-effectiveness and also the aesthetic potential of bamboo as a material for construction and furniture making. In alliance with this aim were other objectives like mainstreaming bamboo, improving the skills of craftsmen and tribal communities, designing and building houses for the poor and improving market opportunities for bamboo craftsmen. Young professionals and design students (architecture, interior and furniture design) were exposed to the challenge of designing for the poor or low-income groups in a participatory and consultative manner, working as equal partners with the traditional bamboo artisans.

A one-month workshop for design and architecture students followed by the design



Bamboo furniture possibilities



Workshop for coating blinds

and construction of two small houses (350 sq. ft. with 3.5 lakhs budget and 450 sq.ft. with 4.5 lakhs budget) for the low-income rural communities - beneficiaries of the Indira Awas Yojana (IAY) government housing scheme being the proxy clients - and a multi-function community building for rural use, and two furniture sets (one for the rural IAY type houses, and one suitable to the needs of lower middle class client groups living in affordable houses in big cities) were accomplished under the project. A final event in March 2017 for all the stakeholders, architects and policy-makers examined the aims and outcomes and a film on the project was later released.

Local techniques like bending the bamboo and tying with ropes instead of making complicated carpentry joints and bamboo-ferro-cement walls were utilized in the Community Centre and model houses structure. The bond with nature irrevocably persists.

Furniture, Lamps and Blinds

Based on Uravu's research and experiments, bamboo furniture was installed in the resort. Ar. Juerg Grunder worked with artisan Rakesh P.K. to develop a family of furniture - tables, chairs and beds. Students from the Indian Institute of Technology (IIT), Bombay and Srishti Institute of Art, Design and Technology invested their whole-hearted efforts in the furniture making process of the Bamboo Log Project. Bamboo expert and long-standing advisor of Uravu, Prof. A.G. Rao from IIT Bombay was strongly involved in guiding the students jointly with Uravu's team.



Woven bamboo lamps

IN:CH



A trans-cultural and interdisciplinary organisation aimed at reviving the society with positive transformations through design and innovation is led by the Swiss Professor and Architect, Juerg Grunder. Influenced by Swiss and Indian culture, IN:CH follows a design language that interweaves art, architecture and tradition. The architects Ariadna Binefa, Pornika Ray, Ambica Ganesh and Parvathi Annadorai played their vital roles with Uravu Eco Links for the construction projects.

P.J. George

P.J. George, civil engineer by profession, has long-standing experience in construction and has been working closely with Uravu Eco Links for the past ten years.



URAVU INDIGENOUS SCIENCE & TECHNOLOGY STUDY CENTRE

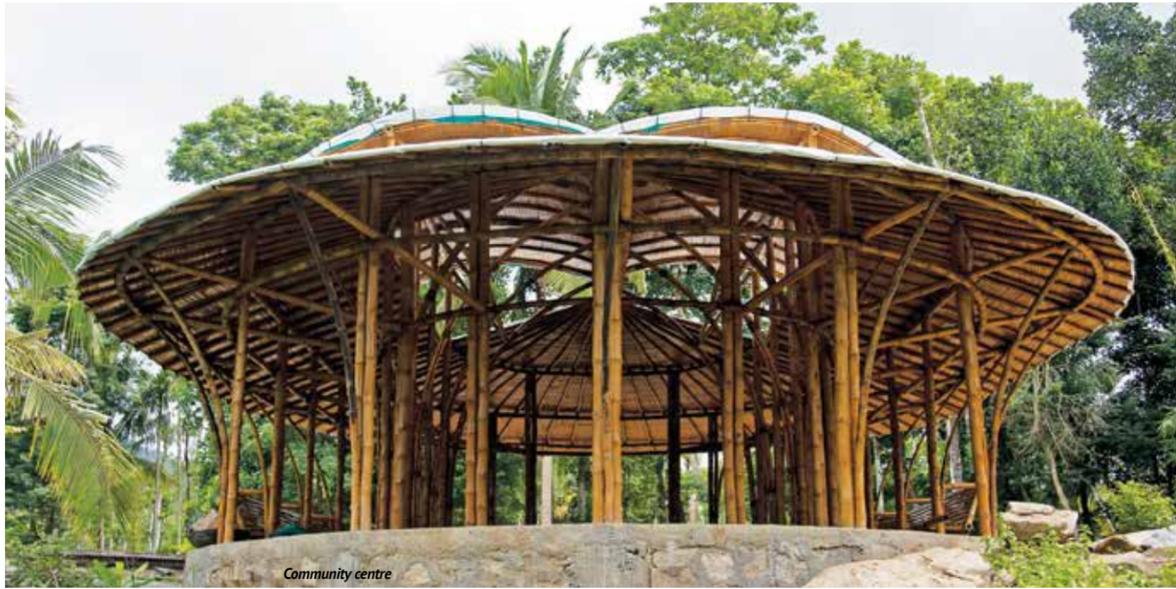
Uravu stands for a collective of people. This includes around 150 artisans and six trust members. Uravu Eco Links consists of a core team of twelve people and works very closely with different partners. The following people were strongly involved in the mentioned projects:

Dr. Abdullakutty A.K. (President and Trustee Uravu), Baburaj M. (Director Uravu Eco Links, Trustee Uravu), Corinne Karlaganis (Management Uravu Eco Links), Jemeela M.M. (President Kalpetta Bamboo Cluster Producers' Association), Krishnasekhar (Uravu Bamboo Log Coordinator), Lenin C.P. (Designer and Artisan Uravu), Muhammed



Sadique (Management Uravu Eco Links), Sivaraj

Kallada (Management Construction Uravu Eco Links), Thekkayil (Secretary Uravu, Director Uravu Eco Links)



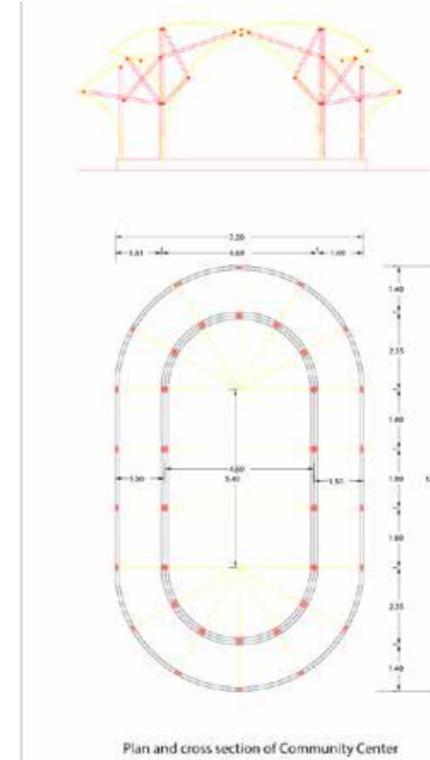
Community centre



Supports and roof entirely of bamboo



Stages of creation of the Community Center



Plan and cross section of Community Center



Bamboo frame of ferro-cement wall



Bamboo truss and roof tiles



3D Model of the Basic Structure



Digital Rendering of the Model

Total Area of the Structure = 911.58 Square Feet.
 Total Money Spent for Construction = Rupees 7,50,000
 Total Length of Bamboo Used = 12,800 Feet
 Total Bamboo used on the Roof (flattened) = 3200 Square Feet
 Total Number of Labourers = 400 Approx.
 Tribal Community Contribution to Labour Force = 40

The rocks on the site chosen for the construction of the Community Centre were used for making the platform base, in combination with mud filling (done by the women from neighboring households).



Bamboo-ferrocement walls



A 450 sq. ft. model house



Interiors of model house

FACT FILE

PROJECT : URUVU INDIGENOUS SCIENCE & TECHNOLOGY STUDY CENTRE
 LOCATION : WAYANAD, KERALA
 INSTITUTION : NGO
 DESIGN TEAM : BAMBOO PRODUCT MAKING AND SKILL TRAINING
 YEAR OF ESTABLISHMENT : 1996
 WEBSITE : www.uravu.net
www.uravubamboogrove.com

Mostly hand-crafted, the team now produces more than 200 types of product variations and around 50 different varieties of lamp shades. Lenin C.P. is an asset who is the designer and trainer of lamp designs. He also does freelance art works and has hosted several exhibitions.

More than 16 types of bamboo blinds fill the catalogue, all made from thin-walled bamboo locally known as reed. The bamboo is cut to the required length and split into slivers of the desired width. It is then treated with borax and boric acid solution, using the hot treatment process in separate tanks. Later the bamboo slivers are hand-carved to the precise dimension by specialised units of artisans. Now, the weavers, using hand operated looms, weave the slivers into bamboo blinds. Finally, the blinds are painted according to the clients' choice and installed at their place. Blinds are being fashioned for hotels, offices and private houses. They can be used in interiors and for external weather protection. 