

Preface

Earth is the only planet where we can live and despite this fact we commit grave damage to Mother Earth, directly or indirectly, intentionally or unintentionally. By committing such acts of damage, we in-fact, are committing suicide in instalments. It is our paramount duty to protect Mother Earth in whatever way possible keeping in mind the welfare of present as well as future generation. One can contribute to the cause of sustainability by using environment-friendly products in his day-to-day life, create awareness about environment protection or popularise others efforts in this direction. And our year book 'Sawdust 2016' is a small step towards achieving this big goal which is themed as 'Planet; People; Profit'.

Our year book, Sawdust 2016 - 'Planet; People; Profit' reveals few of India's best interiors designed with local materials, which are dramatically changing the face of design today. This book is a must-have compendium for anyone interested in conservation, biodiversity, and sustainable architecture and design. 'Planet; People; Profit' looks at some of the most forward-thinking ecological projects from India's known destinations. Featuring more than one hundred full-colour photographs, detailed architectural sketches, this book is the definitive word on what makes sustainable living truly authentic.

We will be happy if this book is able to create some awareness about environment friendly interior designs of India and encourage others to emulate similar or even better designs. It will be our aim to come out with similar editions every year and we request you all to send your suggestions and opinions to make the future edition better than present one.

We also take this opportunity to thank all the architects/interior designers who have actively supported this endeavour by sending their projects along with supporting descriptions well on time.

All comments/opinions/suggestions may be addressed to editor@sawdust.co.in



‘Brick Culture’ is prevalent in India since ages!

Using bricks in construction is not a new thing in India and has been in practice since ages and even today it is a ‘go-to-material’ in masonry. It is stated that burnt bricks were used extensively in making scaffolding when the Taj Mahal was built in white marble and this brick scaffolding was pulled down after completion of the monument. Bricks were used in building Gol Gumbaz, Bijapur in South India and the Red Fort, Agra, near Taj Mahal. World’s oldest residential university of Nalanda, dating back to 500 BC was built in brick. Bricks were also predominantly used in the Indus valley civilisation. Because of its sustainability and durability qualities, it finds its place in either traditional or contemporary architecture even today. In short, Indians are basically ‘brick-minded!’

Brick industry in India

Brick production in India is widespread, and altogether an estimated 150,000 brick making units are thought to exist in India. Local clay is used to produce bricks. Sand is sometimes added to get the right properties. Bricks are normally produced only during the dry season, which lasts from 4–6 month. Clay digging, mixing, moulding, etc. are all manual operations. Both men and women are employed but, in general, the women are only employed for unskilled tasks.

Though brick sector in India is highly unorganised it is tremendous in size and spread. In fact, India is the second largest brick producer, after China, in the world. Rapid increase in demand for bricks in infrastructure and housing industries has contributed to its continuous growth. It is also one of the largest employment generator in the country providing employment to more than 8 million workers.

Why brick is popular?

It is not just the cost or the availability of raw material in abundance which have made bricks so popular in masonry in India but brick as a building material has certain inherent qualities. For example, walls built of clay bricks absorb heat during the day, and release it slowly at night, helping to maintain an even temperature as these bricks have high thermal mass. Due to this thermal insulation property, brick has been a preferred material in construction in India which has tropical climate.

Bricks are sustainable and eco-friendly product as they are made from clay and are fully recyclable at the end of their life. Brick bats of red clay brick can be easily utilized in terrace waterproofing, sunk slab filling (below the toilets), soak pit filling and for rain harvesting soak pit near bore well.

Further, uniform shape of bricks makes them extremely adaptable to nice, complex designs thus making them a natural choice of architects and interior designers. In fact, exposed brick work is becoming a major trend in modern interiors in India.

Now-a-days clay bricks are also preferred because of their acoustic insulation properties. Noise pollution is one of the major environmental concerns in India today but at the same time largely ignored by implementation authorities and citizens due to absence of official studies providing clear linkages between noise and health. Thus, controlling noise transmission has become one of the major concerns of architects today in India. And using bricks in buildings is one of the easiest ways to tackle the menace of noise pollution as the brick walls are extremely good at dampening sounds.

Clay bricks are also found favour with the masonry because of their fire resistance properties. It is observed that clay



bricks can resist fire for longer period of time than other building materials and as a result buildings built from clay walls receive a maximum fire rating.

Most importantly, brick industry in India is popular because of its localized nature. Brick production provides opportunities for rural employment as clay excavators, brick workers, traders, biofuel producers and suppliers, etc. Further, the external capital and technological inputs in brick making are relatively low or practically nil.

Trends in brick industry

Over the years brick industry in India has evolved and today there are many more varieties of bricks available than a decade ago. In recent years brick industry has seen a shift from consuming traditional clay bricks made by the soft mud process to clay bricks made by the extruded process. Bricks made out of extruded process are lighter, harder, stronger, denser, and less porous, hence impervious to seepage, making for better building performance. Also newer technologies have been used which ensure production and supply of bricks throughout the year, even during monsoon. Of late, some international brick making companies too have entered Indian market seeing its tremendous potential.

Presently, the use of bricks is confined to low or medium-rise structures or for internal non-load-bearing walls. Also the concept of brick dry cladding is becoming more popular. A thin decorative layer of brick clad over concrete and

steel gives the façade a natural and better appearance than modern aluminium façades and is being practiced by many architects. Besides traditional clay bricks, natural stone bricks made of granite, limestone, sandstone and marble are also used as cladding material for their durability and distinct look. In order to provide an impervious or ornamental surface on the surface sometimes bricks are glazed using salt.

Despite there being numerous problems associated with brick industry and also numerous new innovations in building materials technology being developed, traditional brick is a natural material that will never be completely cast aside in India. After all it is very difficult to break any culture and it is the same case with "Indian Brick Culture" too.





Architects Home Studio


Bengaluru, Karnataka

designed by BetweenSpaces

The planning of the house - Architects Home Studio, Bengaluru, Karnataka, India designed by BetweenSpaces is done in such a way that the maximum advantage of the uninterrupted view towards the tree lined street on the northern side. Also, locally procured wire cut and kiln burnt bricks, IPS flooring (in studio levels), Yellow oxide flooring, granite stones has been widely used.

Built on a 30 x 40-feet North facing plot in the city of Bangalore, the program accommodates the Architects Own House on ground and first floor level and her Studio space on the upper two levels, with a separate access to the studio in the North East corner. The spatial planning take maximum advantage of the uninterrupted view towards the tree-lined street on the northern side. Owing to the tight site condition and lack of privacy from the neighbour's property, the two bedrooms in the SW corner open out into a double height dining area with a clear storey window for *ventilation and skylight* above for natural light.





Wood hasn't lost its glamour in India

Padmanabhapuram situated in the southernmost state of India, Tamil Nadu, is known for its magnificent wooden palace made of teakwood with granite foundation in the 16th century by the then Travancore rulers. Intricately carved floral patterns, artistic expression and sheer opulence in each of the 108 rooms leave the visitor breathless. To give another example of wooden structure, is the Tippu Sultan's summer palace in Srirangapatnam around 70 km from Bangalore. Built in 1778, this palace is known for its aesthetic beauty and grandeur and is in immaculate condition even today.

Traditionally Indians are more accustomed to teak and other hardwoods that are perceived to be more resistant to termites and decay. Teak is typically seen as a benchmark with respect to grade and prices of other wood species.

Till 60-70 years ago wood was a prominent structural material in Indian construction. However, in recent years, growing population and fast depleting natural rain forests made wood scarce and expensive in India which in turn has led to the increased use of steel, concrete and bricks as main building materials. Today, use of wood has become the privilege of selected few, the elite class, who can afford it and also who love the aesthetic value, precise finish and inherent beauty associated with wooden structure.

Fortunately, situation is slightly changing for better. Though restrictions on domestic harvesting from forests coupled with limited forest resources have limited the supply, consumer and commercial interest in wood interior products are expanding in recent times. This has also given rise to commercial plantations in the country. Some plywood manufacturers have commenced the clonal propagation of Melia Dubia, in collaboration with Rain Forest Research Institute. It serves as an excellent raw material for plywood production on account of its higher yield; it takes only six to seven years for it to get ready for harvest.

It is not so uncommon now a days to see wooden cladding used in commercial and domestic buildings and especially in interiors to infuse warmth into the space. Also with the wide choice of hardwoods, softwoods or engineered woods available, the ability of the cladding panels to be pre-fabricated, great thermal and sound insulation, ease of repair are the other benefits of wooden cladding.

Wood discarded in old buildings which go into reconstruction or redevelopment are in great demand and often used for interiors. Also now a days Indian Railways is replacing wooden sleepers with concrete ones. Such discarded sleepers find favour with our interior designers due to their authenticity and quality and used for modern interiors.



Another, notable feature of Indian home improvement sector is the increased acceptance of engineered wood products especially, MDF (Medium Density Fibre) products due to its inherent advantages. Though MDF industry in India is hardly three decades old, of late the product is gaining increased attention from the environmentally awakened consumers. However, at present its usage in commercial projects (like offices) far outweigh the demand from residential sector. As the MDF panel has a uniform and smoother finish than particle board it is becoming a favourite material for modular furniture products. Moreover, many government bodies have approved the usage of MDF across government establishments.

At present import of MDF boards is negligible (due to cost factor) and the number of domestic manufacturers is also not much as the share of MDF boards in lamination industry is just 5% while rest is accounted for by plywood and other boards. However, the market for this product has grown nearly 25% last year and this year too it is expected to grow almost at the same rate. No wonder, some of the existing players are going for capacity expansion and it is very likely that newcomers too get attracted to this sunrise sector soon.

Some manufacturers are becoming innovative to remain competitive. For example, Century Plyboards (India) Ltd, India's largest

manufacturer of plywood, has set up 54,000- cubic metre per annum greenfield particle board unit at Chennai using sawmill waste and timber remnants. The project cost is estimated at 20% lower than mid-market branded plywood variants and MDF!

Bamboo, due to its high tensile strength and also very good weight to strength ratio, is also seen as green material by many architects and interior designers in India. There are some homes in Assam, a North Eastern state of India, built with bamboo a century ago which still stand safe. Flexibility of the bamboo makes it a versatile product being used in flooring, staircase railings, balustrades and slanted windows in houses. In some cases flattened bamboo boards are used as interlocking floor tiles. Bamboo lumber is used in corrugated roofing, partitions, veneers, ply, and bamboo block floorings.

India with 1.2 billion population of which more than 2/3rd is below the age of 35 is witnessing a sea change in consumption pattern and demand preferences. This young and the aspiring population who are eager on aestheticizing their interiors are not overly bound by traditional beliefs and are ready to experiment. The demographic transition which is taking place will have immense impact on demand composition and trends in the coming years. Also this new generation is environmentally more awakened and is green conscious. That bodes well for the future.



Indian poetry

Mumbai, Maharashtra
designed by KNS Architects

The task for the architects in the project Indian Poetry, Mumbai, Maharashtra, India designed by KNS Architects was to create a canvas so unique that it adds life to the high end jewellery, periodic style furniture and the collectables it showcases in.

The concept of the project Indian poetry, Mumbai, Maharashtra, India designed by KNS Architects is an integration of heritage in a contemporary setting. It is but a show case of North Indian handcrafted traditions such as collectables, artifacts and jewellery.

It is said that an entry to a fortress is marked by its grand doors. The *façade* of the showroom was visualized with the 'door' as the focal element. An enormous periodic panel with traditional rectangular framework marks the entry. The unfinished texture and design vocabulary of the door was maintained and set against a minimal *façade* finished in wood to create an interesting contrast.

The interiors have been designed as an eclectic mix of the unfinished charm with finished elements. An island full of jewels was created within the store to demark it. Visualized as an urban island, it was given a minimal design, finished in mesmerizing turquoise green back painted glass. The surrounding areas house the artefacts which are set against an unfinished backdrop. The VIP lounge has been juxtaposed







- LEGENDS:**
1. ENTRANCE PORTICO
 2. FOYER
 3. OFFICE
 4. GAZEBO
 5. POWDER ROOM
 6. WATERBODY
 7. DOUBLE HEIGHT LIVING ROOM
 8. PUJA ROOM
 9. ELECTRICAL ROOM
 10. HOME THEATRE
 11. OPEN TO SKY COURT
 12. PATIO
 13. DECK
 14. DINING
 15. KITCHEN
 16. UTILITY LAUNDRY
 17. UTILITY YARD
 18. LAUNDRY
 19. STORE
 20. SHOWER
 21. TOILET
 22. SERVANT ROOM
 23. GUEST BEDROOM_2
 24. WALKIN CLOSET
 25. GUEST BEDROOM_1
 26. COURT
 27. SEMI OPEN GARAGE
 28. HOBBY ROOM
 29. SON'S BEDROOM
 30. FAMILY ROOM
 31. GYM
 32. DAUGHTER'S ROOM
 33. BALCONY
 34. MASTER BEDROOM

Ground Floor Plan
KRISHNAN HOUSE, BENGALURU, INDIA



NORTH EAST ELEVATION



NORTH WEST ELEVATION

Elevations
KRISHNAN HOUSE, BENGALURU, INDIA



Section AA



Section BB

Sections
KRISHNAN HOUSE, BENGALURU, INDIA

