

LOW CARBON Living

Das, Riti and Amala designed for themselves a home that has massive doses of Reuse and Reduce, and was built in half the time and cost of a regular house.

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*Home profile

THE OWNERS Dasarathi (Das) heads a firm that makes products for Computer Aided Manufacture, is a cycling nut, and practices and preaches sustainable transport. Riti used to be a journalist, but now owns a corporate training firm 'Riti's Murder Games', that specialises in skill building workshops using mystery activities. Their daughter Amala, 15, studies in 10th grade in Mallya Aditi International School. Laila, the dog, is a 2-year old adopted off the street.

THE PROPERTY A stand-alone house built on a 5400 sq ft site in Bengaluru. The couple's parents live on the ground and first floors, while they themselves live in a newly built section on the first and second floors. The first floor has living and dining areas and an open kitchen, and the second floor has two bedrooms. All the families share a common guest room.

STAIRCASE

Made of steel and reused pine wood from packing cases, it rises over a couple of old rosewood cupboards that house, among other things, crockery, liquor and pickle collection from various parts of the country (the whole family are pickle addicts). The floor is plain polished cement. The kitchen sink is reused, from a demolished home. The kitchen panels are reused pine wood.



LIVING AREA

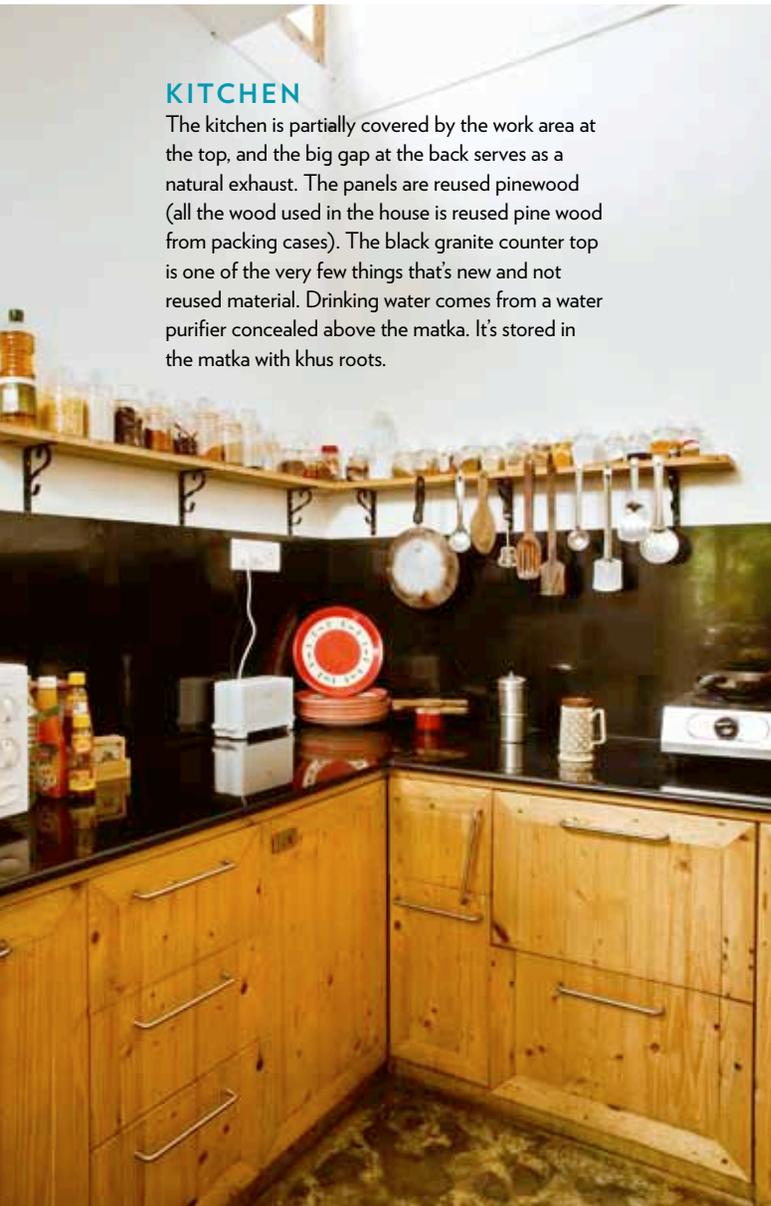
"You'll find no colour coordination in our home - we deliberately use multiple colours" says Riti. For dust prevention the book shelves have thin transparent cloth instead of glass. The furniture is minimal, just cane chairs and an old rocking chair. The walls have no paintings because there are no walls, just windows that are permanently open. Das jokes that they literally only have a roof over their head.

When we decided to get a house built, we thought we did not want an over-designed structure with lots of unnecessary concrete and steel. The average house is built to last a couple of thousand years, but is typically broken down in 25 years because the next generation's requirements have changed. We told the architect that our house should fall down on its 25th birthday on its own. We're however keeping our fingers crossed now – we've used so many new and untested ideas that we're hoping it doesn't fall down earlier.

As a family we've always been conscious of reducing our impact on the environment around us, so our home has been designed to be low on energy and water consumption, and uses minimal construction material. We do not have air conditioning or exhaust fans. The kitchen smoke goes out because of a natural draft. Concrete roofs trap heat and radiate it at night, and can get very hot in summer time. The bamboo sheet roof in our home does not trap heat, so fans

KITCHEN

The kitchen is partially covered by the work area at the top, and the big gap at the back serves as a natural exhaust. The panels are reused pinewood (all the wood used in the house is reused pine wood from packing cases). The black granite counter top is one of the very few things that's new and not reused material. Drinking water comes from a water purifier concealed above the matka. It's stored in the matka with khus roots.



DINING AREA

The pine wood dining table and stools were designed by Das. The table top was painted by the person who supplied all the glass from demolished buildings. The table is just enough to seat the small family. When there are guests at mealtimes they just sit on the living room chairs or on the floor.

ROOF

The roof is corrugated bamboo sheet with pine beams holding it up. The space between the roof and beams is very convenient for squirrels to build nests, and quite a few generations of squirrels are born and grow up in these spaces. The backdrop is a litchi tree behind the utility area, and mango and coconut trees on the other side. On the right is the utility area with the yellow ochre floor.





VIEW FROM THE KITCHEN

'We avoided grills on the windows because we did not want to block the view' says Das. The hanging lamp shades were bought off the footpath in Sunday Market, second hand. The fan in the picture is only used occasionally, for a few days in summer. The black Ikea chair is a discard from a friend's home.

are rarely used. We have a 20,000 litre rain water harvesting sump; hot water comes from a solar heater. We have partial grey water harvesting. The grey (bath and wash basin) water from the second floor toilets is used to water the garden. We'll be extending this to the water from the kitchen sink and washing machine too. We're also thinking of switching to dry toilets to reduce water use in the toilets (which can be up to 40 % of the total used).

We have reduced the use of construction material dramatically. We don't have tiles on any of the floors - most of them are plain grey cement, some are painted. The few walls that we have are built with ordinary bricks. Such walls typically have up to one-and-half inches of plaster to get a flat and smooth surface, but our walls have quarter-inch of plaster everywhere, and undulate with the shape of the bricks. So cement and sand for plastering has been reduced by 75%. The roof is corrugated bamboo sheet instead of reinforced concrete - huge reduction in cement, sand and steel.



TOILET

The toilet (like all the toilets in the house) has large glass windows and a painted floor, no tiles. Privacy is not a problem since the toilet is on the second floor, with a coconut tree at the back. The wash basin, commode, shower and taps are reused, from demolished homes.



DAUGHTER'S ROOM

The pine wood floor is actually built on top of the old concrete sloping roof, and is hollow underneath. 'We had the option of breaking the sloping roof and making a flat concrete one. This would have involved a huge amount of steel, cement and sand, and would have cost us about Rs.4 lakhs. Instead, we built a flat pine wood floor for one-tenth of the cost' says Das. The table idea was picked up from a Japanese restaurant.



A lot of the material is reused. The wall frames and roof structure (to hold the bamboo sheet) is reused pine wood from packing cases; most of the glass is from demolished buildings. The toilet fittings (commodes, wash basins, taps and showers) are from demolished buildings, and so are the stainless steel kitchen and utility sinks.

Windows are meant to let the weather in or keep it out, depending on whether it is good or bad. Bangalore has pleasant weather through the year, so we thought we could actually live with it. Our windows are open through the year, and we can actually feel the weather all the time – sunny, cloudy, rainy, whatever it is. When it rains heavily the bamboo roof makes a lot of noise, and you have to speak quite loudly to make yourself heard. The resident wildlife too moves in and out of the house as if there were no boundaries – monkeys, squirrels, birds, butterflies, bats. Our dog Laila

has huge fun chasing these, and luckily for them she's a lousy hunter. Although we'd love to have a couple of cats as pets we're sadly unable to because of generations of squirrels that live below the corrugations in the bamboo roof, and cats are efficient hunters.

Most of the appliances and vehicles in our home are second hand or factory seconds, for a combination of environmental and cost reasons. The water purifier, the fridge, laptops are second hand. Nimboo (the Maruti Gypsy) is third hand, 20 years old. Revathi (the Reva) is third hand, 10 years old. My vehicle is a bicycle, on which I commute to work (a distance of 13 km each way) and go everywhere else. Riti uses Revathi. Amala walks, cycles or takes a bus. We use Nimboo a couple of days in a month.

The web site www.lowcarbonlife.in has details of the ideas used in the house, and sources for the reused materials.



THE ENTRANCE

The steps on the ground floor, lead to the staircase going up to the house. The picket fence is meant to keep Laila from scaring off visitors. The granite paving stones are discards from the city's pavements, made surplus when they were replaced by mosaic tiles by the city corporation.

MONKEY BUSINESS

Monkeys are frequent visitors to the home, and can create havoc because the kitchen is so easily accessible. The anti-monkey spikes are meant to prevent them from entering the house. The spikes are located at various entry points popular with the monkeys, like rain water harvesting pipes.

Nothing is concealed in the house. The plumbing and wiring are out in the open, but somehow blend in with the house and do not look ugly. This was deliberate, to make maintenance easy.





* Home truths

What do you like to bring back home from a holiday trip? Das brings back unusual liquor, pickles and some inches around his waist. I bring back great memories and some ideas on how to rearrange things around the place. Neither of us likes to clutter our home with assorted knickknacks from our travels.

Who contributed most to the design of the interiors?

Das, of course, as anyone who knows us would guess. He is the one who suggested minimum fixed furniture, a wooden farmhouse look and cane furniture everywhere. I am a glass, steel and marble woman : but I love the look and feel of our home now.

Your favourite item of furniture in the home? The black Ikea chair in the living room. It's wood and leather, and has a lovely spring effect.

Your most private space in the home? The sloping terrace next to the work area. It has a mango tree right next to it, and I like to sit in a bean bag there at nights.

What inspired you to start Riti's murder games? Oh, I've always been a murder mystery aficionado. I suddenly decided it was time I enabled other people to enjoy the experience of solving mysteries, and to also derive learning and skills from the process.

What ideals have you tried to instil into your daughter? I have tried to inspire my only child to make the most of her life, choose a profession that would give her both joy and money, and eventually be a person who will be remembered beyond her time for her contribution to the world around her.

BEDROOM

The bedroom opens out onto the work area, and has a large window looking out into the living area. The bed is on the floor (like in other bedrooms). The floor is polished cement. The family prefers old-fashioned mosquito nets to keep away mosquitoes, instead of mosquito repellent liquid that might have harmful chemicals.

The sloping bamboo roof is perfect for rain water harvesting. Semi-circular channels receive the water and carry it away to the sump. You can use this roof only on the topmost floor, and only in places where you can let in the weather all year round.



A lamp shade made of a dried gourd. Das, who's part of the neighbourhood dry waste segregation and recycling program, retrieved it from someone's dry waste bag. They had actually thrown it away. This requires being in the right place at the right time, and a willingness to shove your hands into someone else's garbage.

Lamp shade made from a straw hat, with some string used to change its shape a bit. This particular shade had to be very light weight because it hangs from a 10 ft. long wire.



Neat key hanging idea – hooks at the back of the shelves. Easily accessible, but not very visible – particularly since there is a thin cloth curtain on the front.

The elephants hold the books that the family is currently reading, while the rest are in the shelves at the bottom.



IDEAS TO STEAL

from Dasrathi and Amala's home

Low cost aesthetics, using reused material