

Inside Outside

THE INDIAN DESIGN MAGAZINE

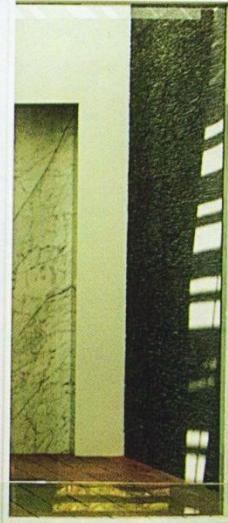
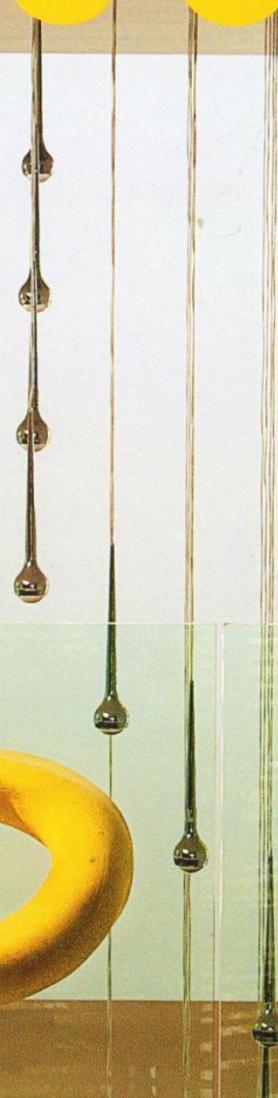
ISSUE 335 MAY 2013

₹ 50

TAO ARCHITECTURE

constructs a home built
with stone to combat
the climate in Jodhpur

RLDA creates a
vibrant and dynamic
salon in New Delhi



A Nasik bungalow
by **MANOJ BHANDARI**
with 'floating' furniture

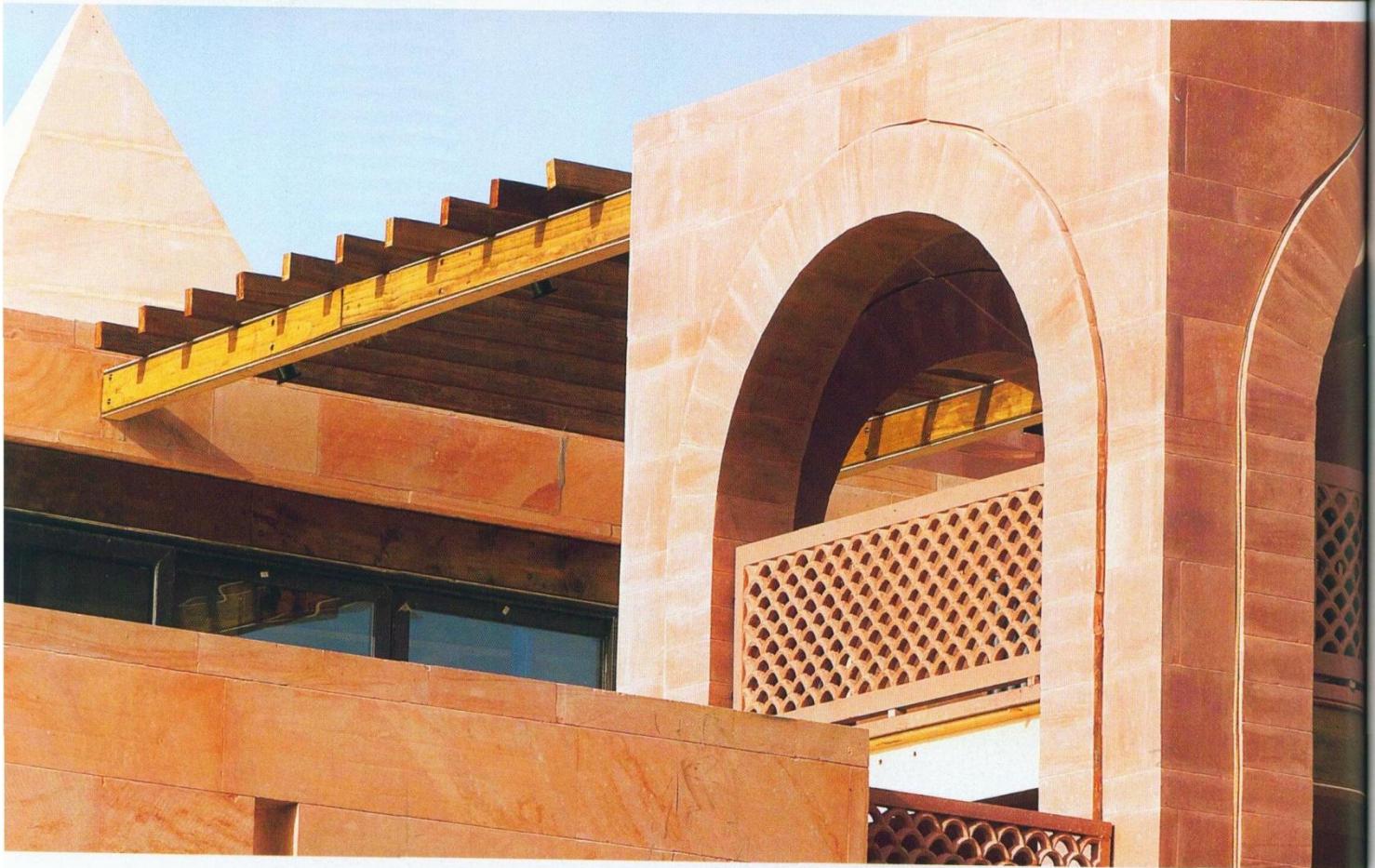
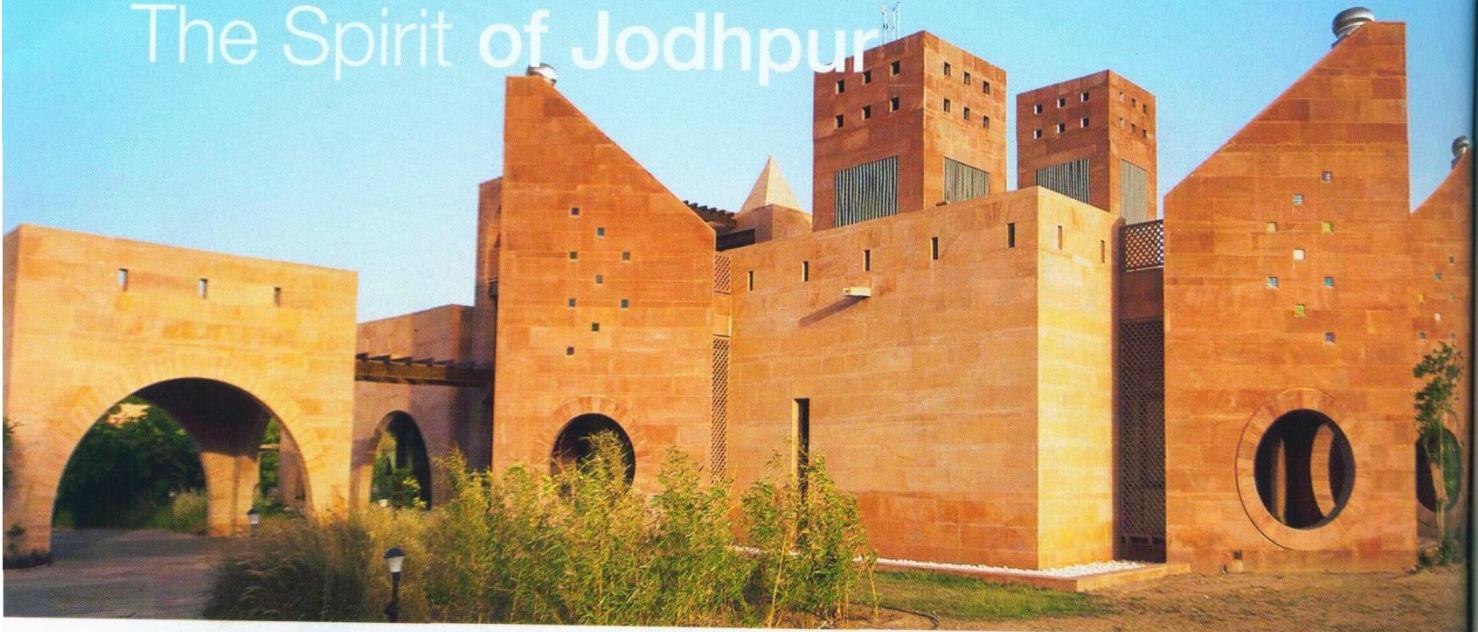


ALSO FEATURING:

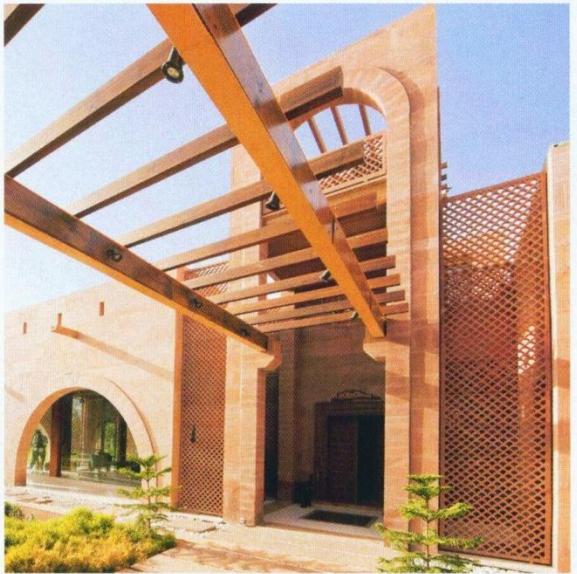
Bunnag Architects
International Consultants,
Thailand
Hablani Architects, Indore
S Gopakumar and Anuj's
office, Kochi

Cover Story: Architecture Paradigm designs an understated home in Bengaluru

The Spirit of Jodhpur

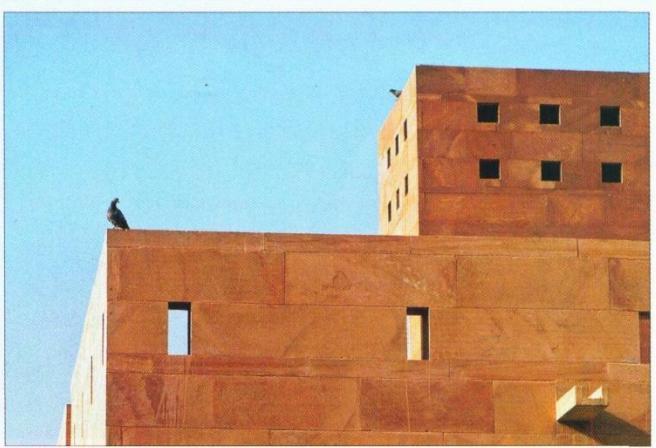
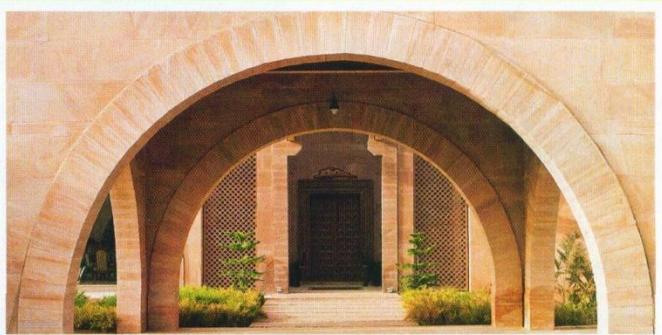
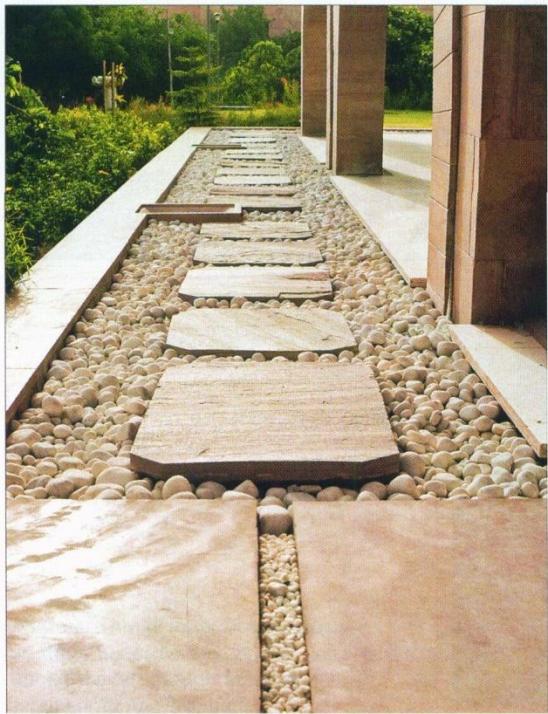


residence



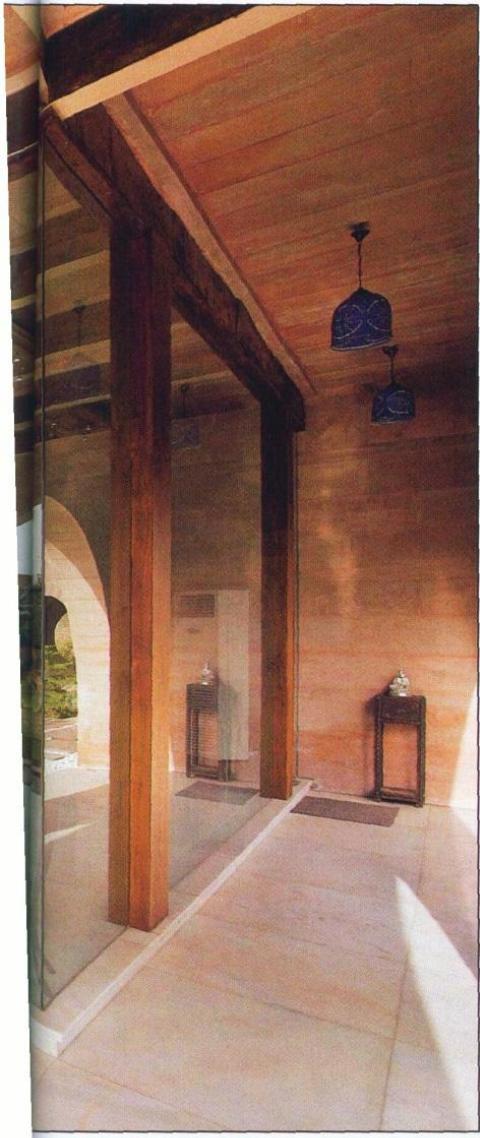
Designing a residence in Jodhpur was an interesting journey for Pune-based architects Manish Banker and Shailesh Untwale of TAO Architecture Pvt Ltd, who set out to capture the spirit of the desert city in a contemporary idiom. Their design met modern living needs using local construction techniques and materials, rather than by transporting these from other areas.

TEXT: BRINDA GILL
PHOTOGRAPHS: SAFAT ALI, COURTESY THE ARCHITECTS





Broad verandahs that set rooms away from the exterior walls; recessed glazing only in shaded areas so that direct sunlight never falls on them; stone jaalis that cut out the intense glare yet bring in light and ventilation were sketched on the drawing board.



There are small inner courtyards, so there is hardly any direct sunlight even though there is ample light and fresh air.

We went to Jodhpur as students rather than as professionals,' says Manish Banker of the initial trip he and Shailesh Untwale made to the desert city in response to Nisha and Satyendra Johri's invitation to design a modern residence for them which would connect with the outdoors and reflect local culture. The architects surveyed the client's two-acre plot, located in a residential community surrounded by hills on the outskirts of Jodhpur, and went around the city studying and absorbing its traditional stone architecture, the exquisite fretted stone window panels and local crafts.

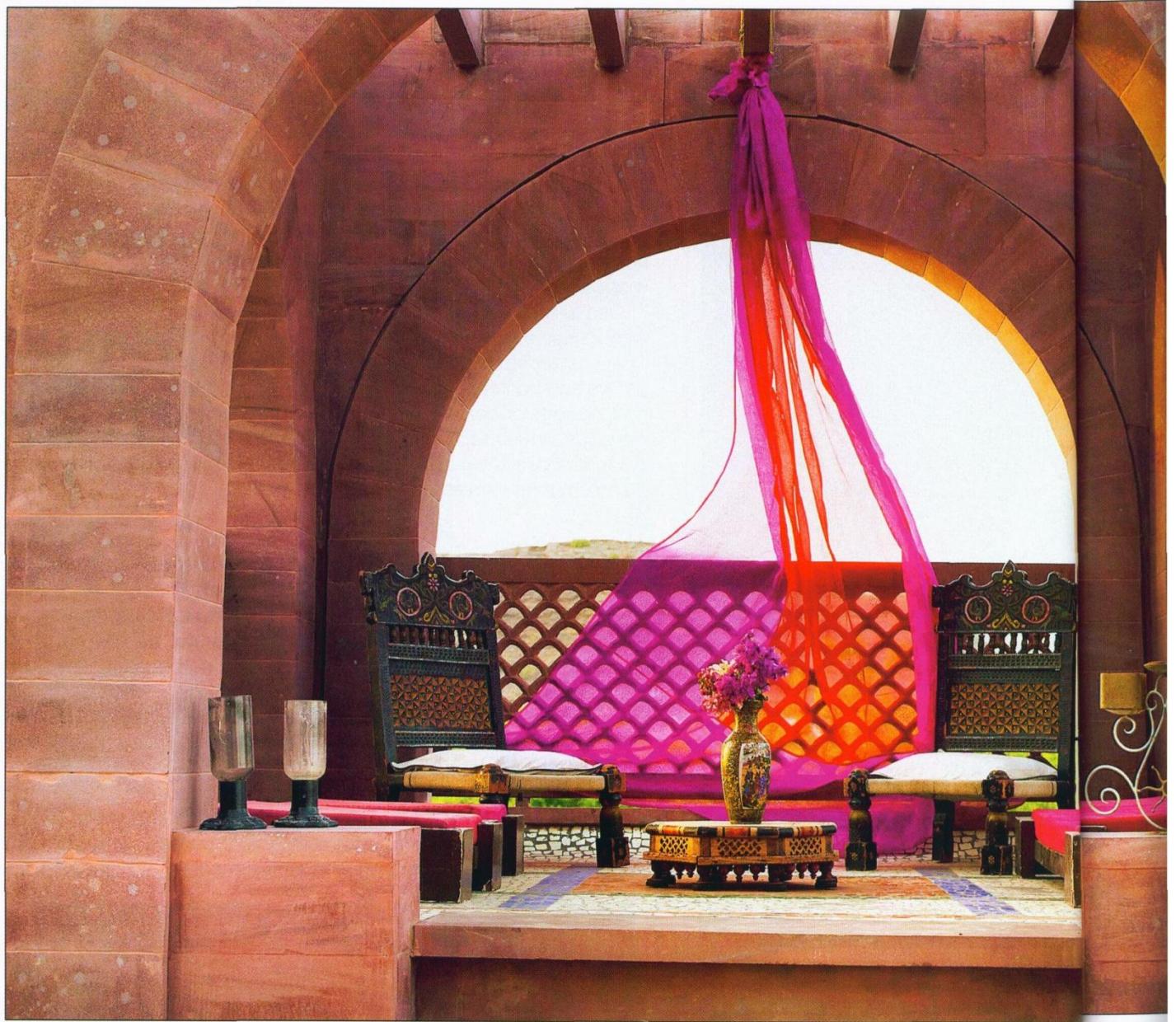
Even as they visited Jodhpur's stunning Mehrangarh Fort, Umaid Bhawan Palace and old havelis built of stone, the architects noticed some of the newer structures were of stone-clad RCC, aluminium composite panels and fronted with tinted glass and also the structures that were a hodgepodge of local design elements. At the end of the trip, inspired by the city's vernacular stone construction and building techniques, they thought of designing a sandstone residence that would, however, make a contemporary statement.

FUNCTIONAL AND DECORATIVE

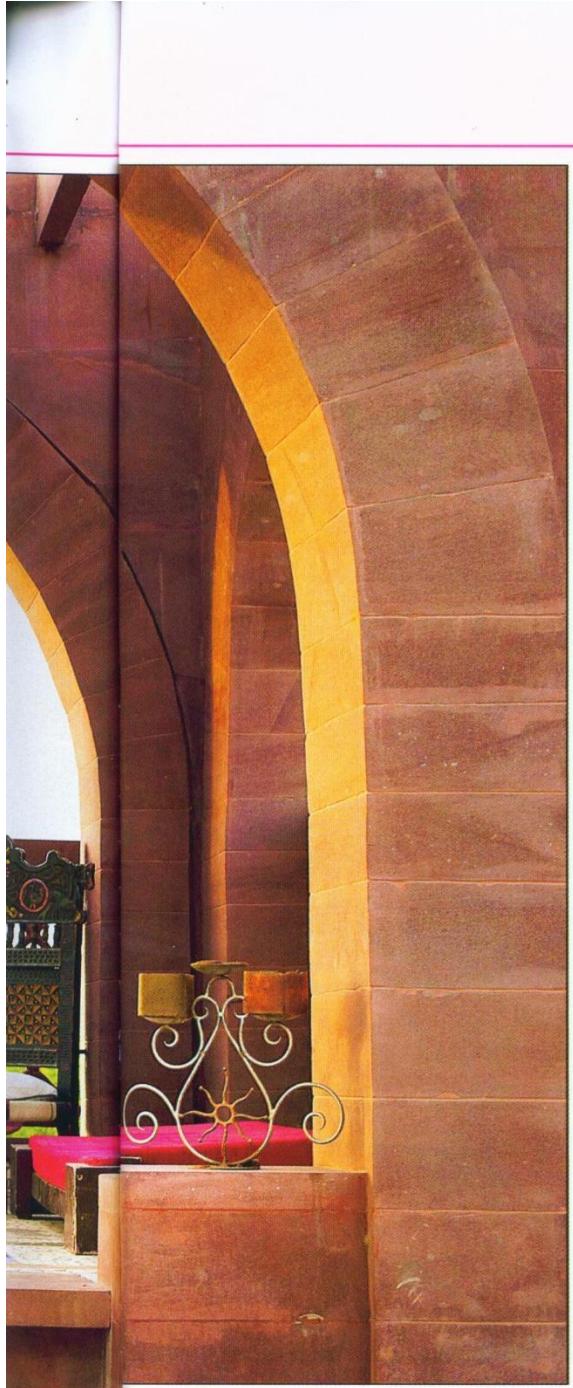
While the Johris were initially hesitant about a stone structure, they soon gave Manish and Shailesh the go-ahead. The architects were impressed by the potential of stone as a strong building material, its ability to absorb and retain heat unlike concrete, as well as by its decorative functional elements like carved stone brackets, jaalis and lattice screens.

'I have for long been inspired by Ahmedabad-based architect Nimish Patel's work stemming from traditional architecture, indigenous knowledge and the contextual responsibility of design decisions. He encouraged me and gave me the confidence and I decided to go ahead with planning the residence with exposed sandstone walls, arches and ceiling as well as using local methods of construction, skills and crafts,' says Manish. And to bring in a play of colour and contrast, the

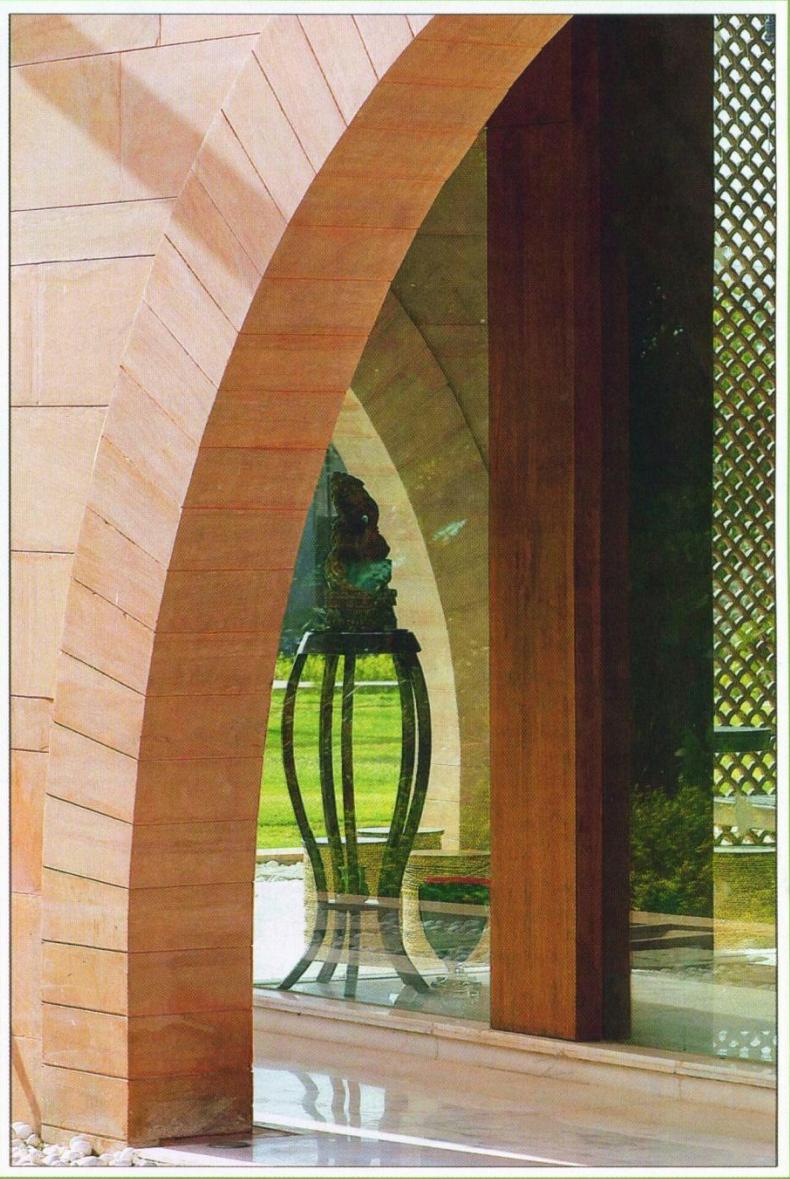




Given Jodhpur's searing summer heat and the cold winters, designing an eco-friendly home that would be naturally cool in the summer was the primary challenge.

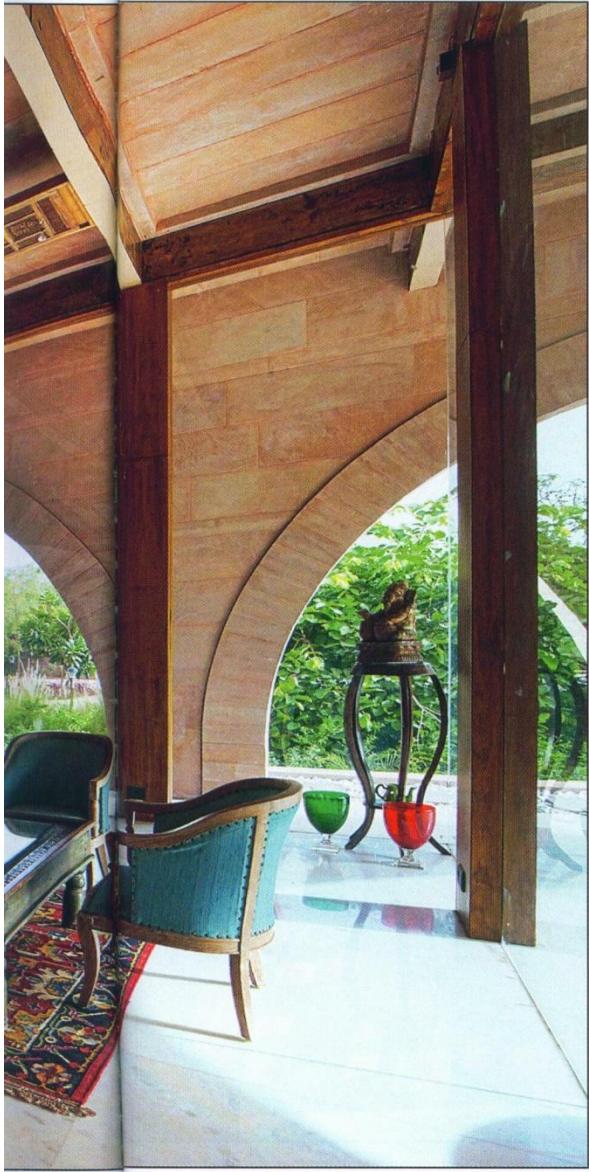


'The residence has exposed sandstone walls, arches and ceiling. Local methods of construction, local skills and crafts have been used.'





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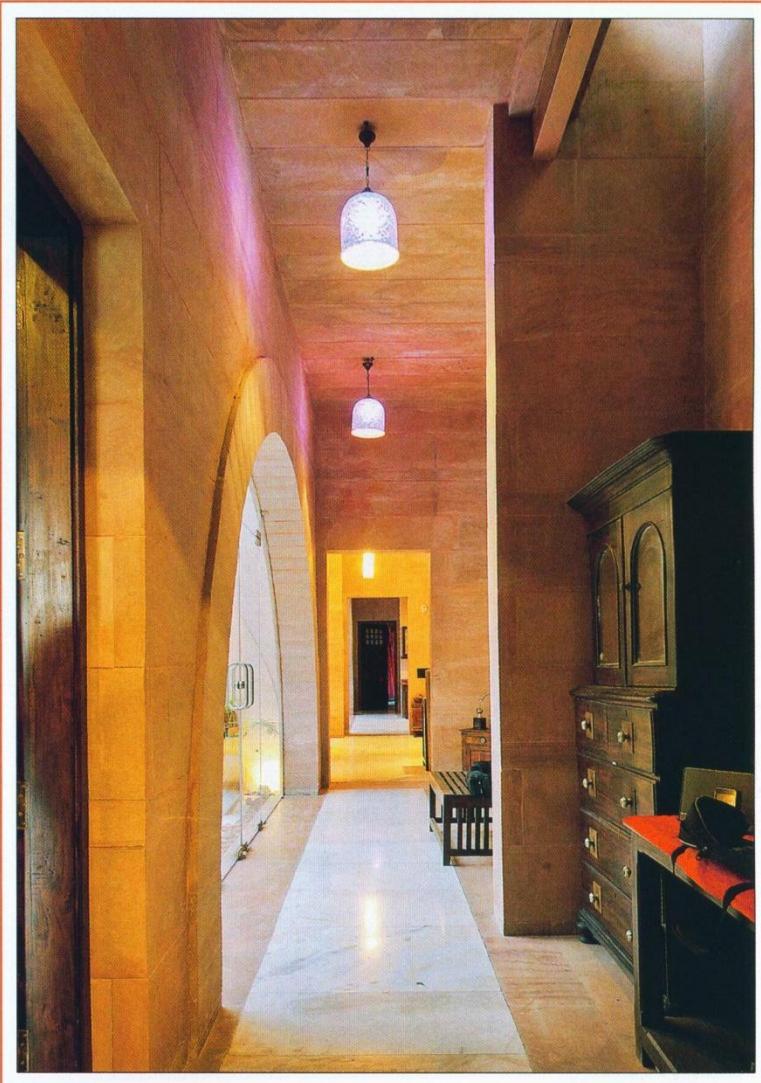


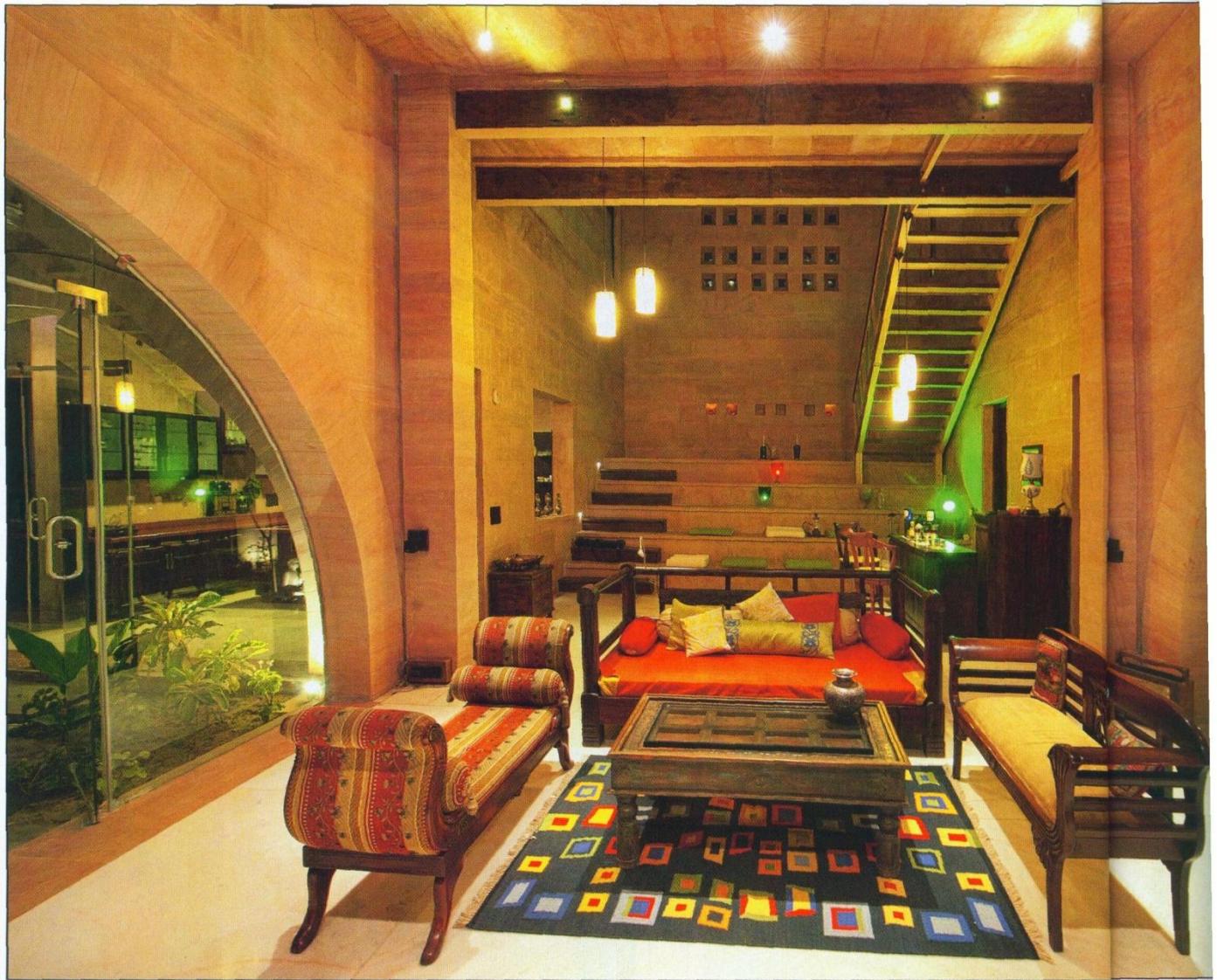
'Lime and sand was used for making the mortar; jaggery was mixed for plasticity and it has worked very well.'

architects opted for a combination of a light peach coloured sandstone with reddish-brown sandstone.

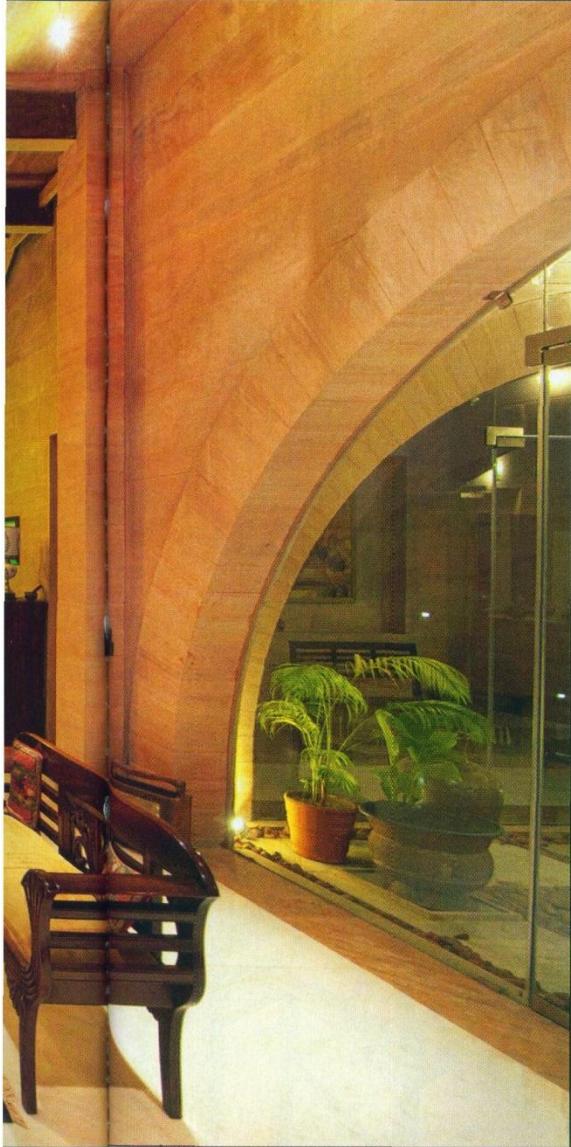
DEMANDS OF THE DESERT

Given Jodhpur's searing summer heat and the cold winters, designing an eco-friendly home that would be naturally cool in the summer was the primary challenge. Once again, studying local architecture Mahesh realised there was a way to beat the heat through design rather than air-conditioning. Broad verandahs set rooms away from the exterior walls; recessed glazing only in shaded areas so that direct sunlight never falls on them; small inner courtyards so there is hardly ever any direct sunlight even though there is ample light and fresh air; stone jaalis that cut out the intense glare yet bring in light and ventilation, were sketched on the drawing board.





To avoid RCC and cement, load-bearing walls were used, which in turn necessitated thicker walls and arches to strengthen them; after calculations it was decided to go in for one foot thick walls that would be ideal for absorbing and retaining heat through the day thus keeping the place cool. As the walls are of stone, the conduits for plumbing and electricity all had to be completely planned beforehand.



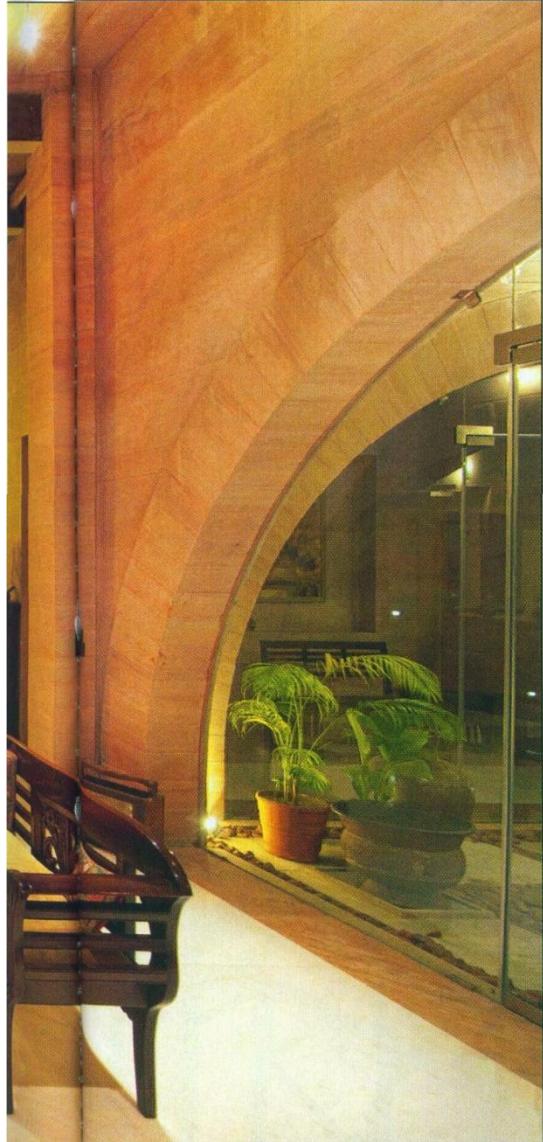
The furniture, lamps, upholstery and soft furnishings are locally crafted.

And the most important feature that Manish sketched was the passive cooling system. It comprises a matrix of three tall cooling towers fitted with a filter, water tanks, louvres and a mist facility to usher in cool, moist air along with six stack towers. Each has a glass panel on an angled top to allow the sun to heat the air further, with a moving turbo vent on top to draw out hot air, to keep the home ventilated, cool and fresh in the summer months.

A COMPOSITE DESIGN

Integrating all these elements, the architects designed a 7,911 sq ft residence of four bedrooms. Broad round arches from the entrance porch to the verandahs, two courtyards, each with a water fountain, primary common areas of living, dining, kitchen and family spaces around the courtyards, a charming machaan to enjoy outdoor views and a spacious ter-





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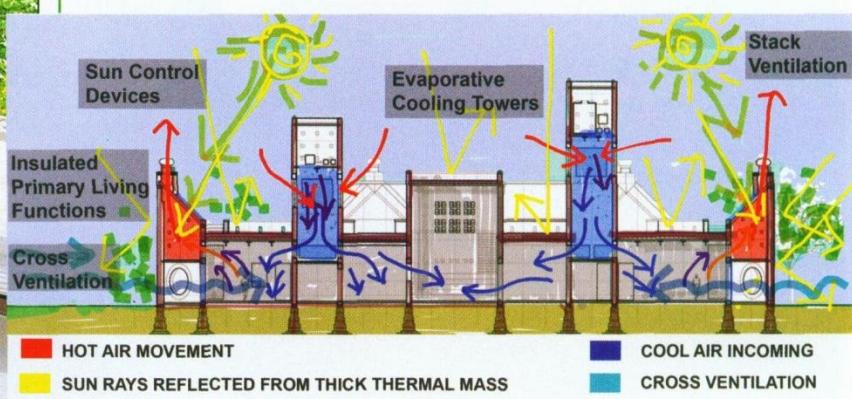
The 7,911 sq ft residence of four bedrooms is graced with broad round arches from the entrance porch to broad verandahs, two courtyards (each with a water fountain), primary common areas of living, dining, kitchen and family spaces around the courtyards. The sandstone residence makes a contemporary design statement.

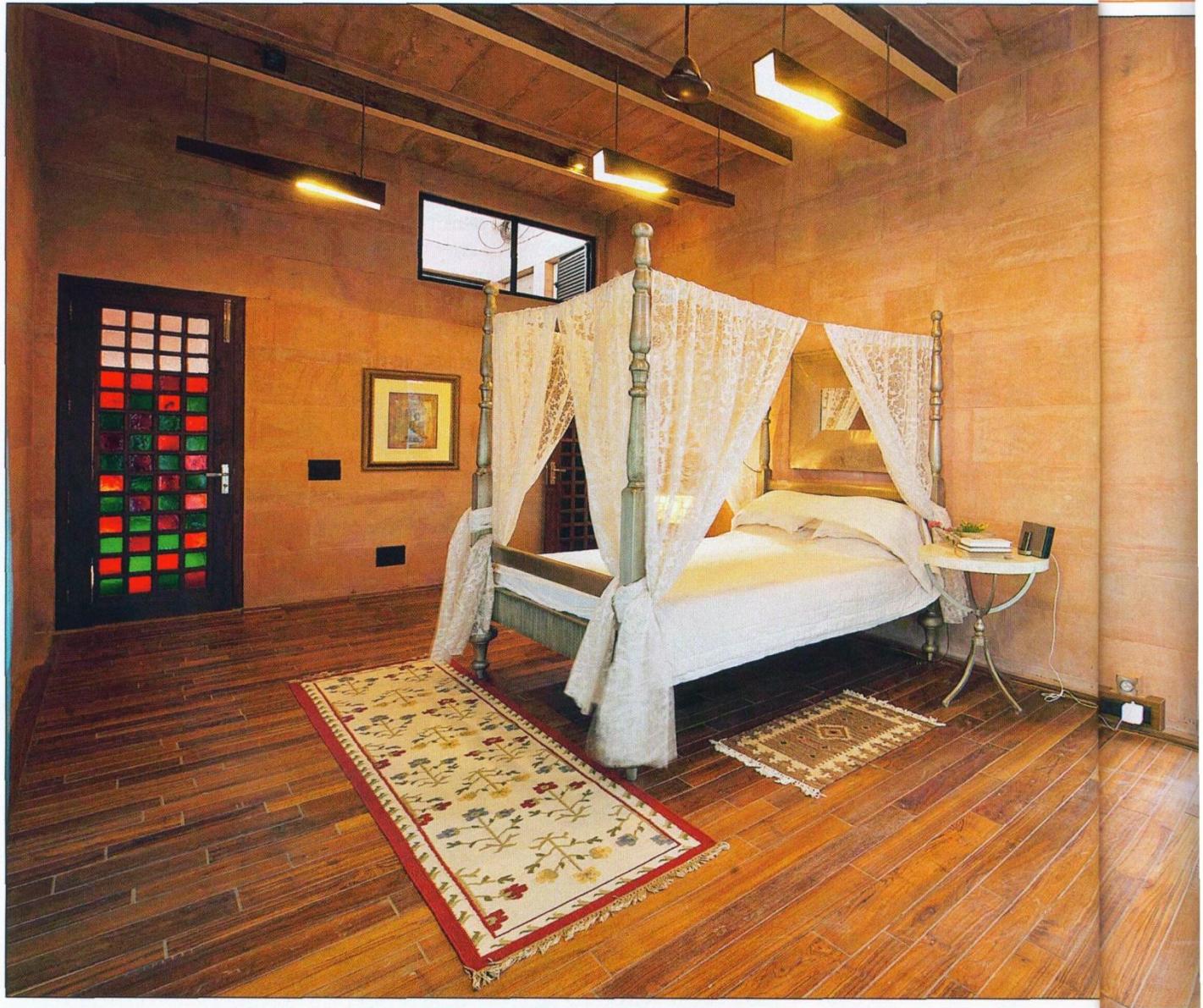


race with a pyramid-form meditation room. As they wanted to avoid RCC and cement, they went in for load-bearing walls, which in turn necessitated thicker walls and arches to strengthen them; after calculations it was decided to go in for one foot thick walls that would be ideal for absorbing and retaining heat through the day. As the walls are of 100% stone, the conduits for plumbing and electricity all had to be completely planned beforehand.

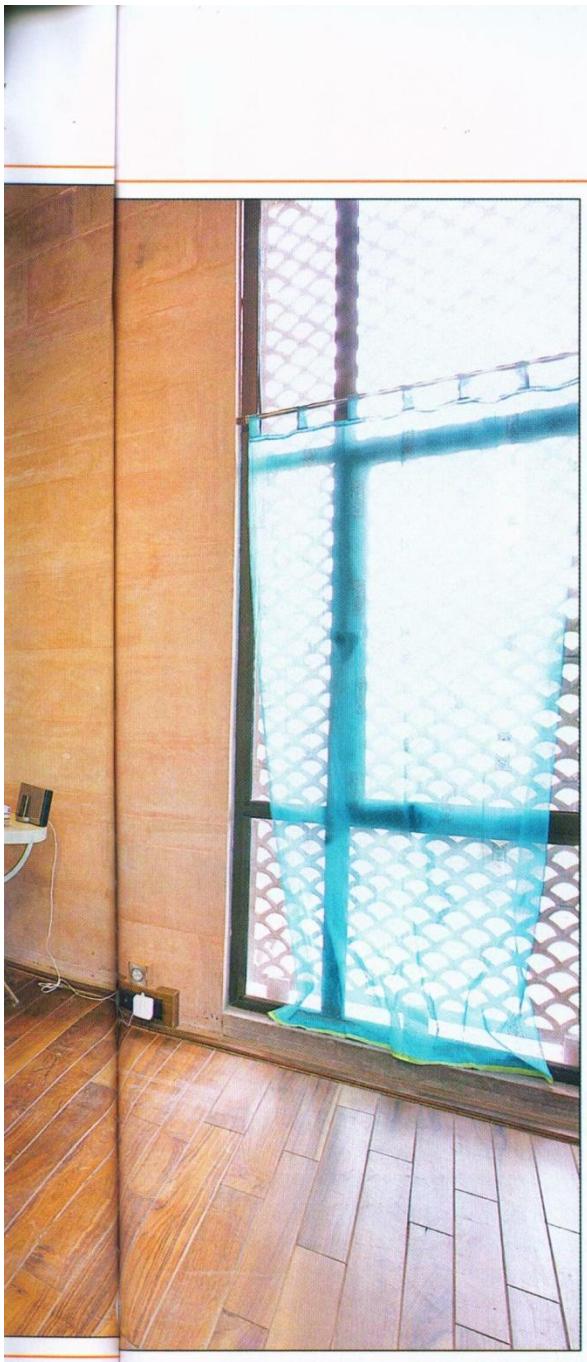
To cool the interiors further, the ceiling has a gap of 12 inches; upturned terracotta bowls were placed on the roof for creating an air gap/thermal insulation – a layer of lime mortar, followed by a slab of stone and china mosaic chips on top of the slab to deflect sunlight. The cooling towers were placed within the house, while the stack towers stand at the periphery to ensure a continuous flow of air through the home. Rain water harvesting measures, in the form of channels edging the residence and spouts, ensure the water flows to a large underground tank.

Pune-based architect Prof S L Kolhatkar, an expert in environmental studies, guided the team in respect of technical data related to designing





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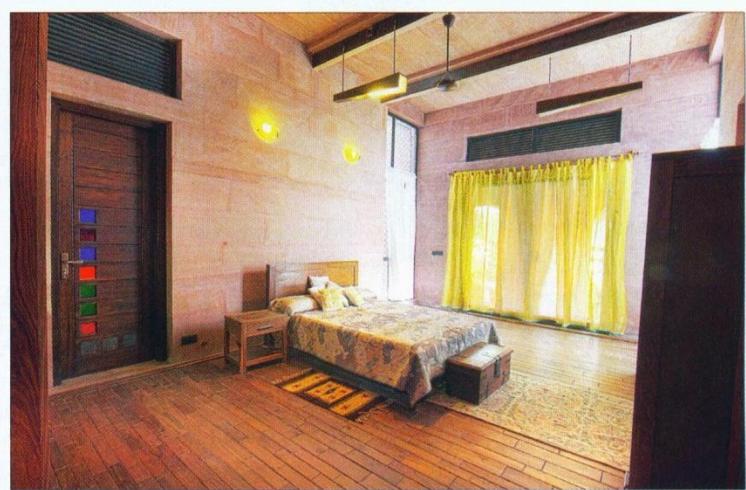


Small details reflect the architects' approach of focusing on the construction of decoration, rather than decorating construction.

in response to the climatic conditions such as the thickness of walls, and the height and size of the cooling towers. Except for the foundation, no cement was used in the construction. 'Traditional structures have been built with minimum or no mortar. Lime would be filtered and mixed with sand and used for setting the stones, which themselves would be set in an interlocking system. Lime mortar, in fact, strengthens over time. That is why the old forts are so strong. For the Johri residence, lime and sand was used for making the mortar; jaggery was mixed for plasticity and it has worked very well,' says Manish.

DELIGHT IN DETAILS

Synthetic and processed materials like plywood, particle board and veneers were consciously avoided, and real wood was used for furniture, panel doors, flooring in the bedrooms to keep them warm in the winter and as a ceiling element to integrate the electrical services. Peach coloured marble from Makrana has been used on the living room floors





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to keep the spaces cool in summer, and 'lakha' red granite features in the kitchen work surfaces and utility areas. While the stone walls precluded the need for plaster and paint, the bathrooms have eco-friendly lime plaster walls with an organic pigmented blue – a colour synonymous with Jodhpur's traditional homes.

Small design details reflect Manish's approach of focusing on the construction of decoration rather than decorating construction. The towers were built with red sandstone and the rest of the residence with white sandstone for a play of colours. The cooling towers have small openings to allow for insulation for the water tanks and these are fitted with coloured glass, creating striking light effects in the evenings. CFL and LED light fixtures are used in the entire house; lights at the base of the arches create a lovely effect at evening as they highlight the curving lines of the stone-work. Round openings at a low level in the towers offer an easy place to sit, offer views of the outside and when lit, add a touch of drama. The furniture, lamps, upholstery and soft furnishings are locally crafted – the entrance has an old carved solid wood door, wooden interior doors are fitted with coloured glass panes to bring in diffused light, and coloured glass lamps add colour to the otherwise soft colour scheme.

With just four bedrooms, the spacious home has many informal, common and interactive areas, making for a sense of space and for the family to be together. A constant flow of moist air keeps the home naturally cooled, while light filters through the lattice stone panels casting fretted long and short shadows throughout the day, almost like a moving canvas. Stirring the curiosity of onlookers and bringing much fulfilment to the Johri family, the residence reaffirms the timeless wisdom, strength and adaptability of traditional Indian architecture. □