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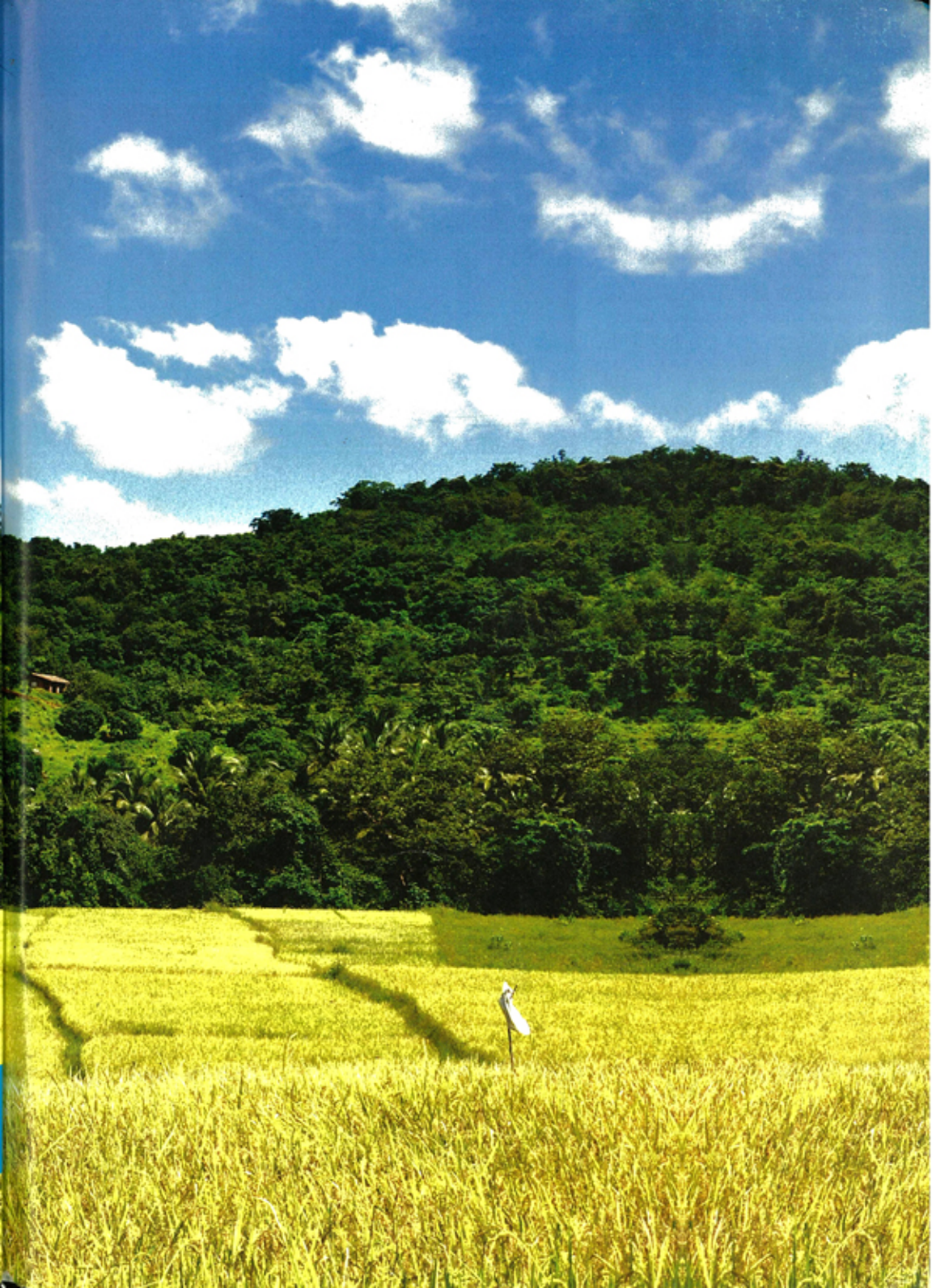
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PURE MOTIFS

ANCIENT METHODS OF CONSTRUCTION CAN BE USEFUL IN A MODERN CONTEXT FOR THAT 'CLOSE TO nature' feel. A farmhouse in Ratnagiri, by architect Mahesh Nalk, is an example of how it can be achieved while taking care of the environment





You can call it a contemplative retreat or an expression of 'a purist model', that draws its energy from its surroundings. Called 'Moonlight', this under-construction farmhouse in Ratnagiri, Maharashtra, has virtually gone back to the basics, in the use of materials and methods of construction to give it a rustic feel and save on cost. Local labourers along with the architect Mahesh Naik had to, at many stages, innovate on site.

A purely load-bearing structure, the retreat has black basalt rock in the foundation. Known for its high compressive strength, the rock was blasted on-site to cut down on the material cost. RCC coping was introduced in the joints between the basalt foundation and the brick walls to avoid cracking of the walls, since this area is prone to seismic activity. Bricks from a nearby village, Kudal, were used in walls, corbelling, arches, vaults for the bedrooms, and in the library dome.

A concrete shell roof over the mezzanine floor cantilevers more than six metres on both sides to provide ample shade and protect the house from the monsoons and the hot afternoon sun.

Privacy is maintained through the concrete shell roof that tapers down towards the entrance on the east and west sides. To make this roof, hollow box mild steel section (32mmx32mmx3mm) girders were used within, for their high tensile quality and high resistance to buckling. The result was a beautiful combination of two dynamic forces—the compressive quality of brick and stone (used in arches, dome vault and foundation) and the tensile nature of the concrete shell roof.

Placement of fenestration was crucial in the architecture as the spaces are designed without defined lines of front, rear or side, they having no beginning or end. The outside enters in and inside







merges seamlessly with the environs. The mood within the house keeps changing as the sun crosses from the east to west, lending energy and dynamism to the spaces.

Toilets and kitchens are shaped in a cylindrical form. The advantage of a circular wall is that the plumbing pipes (chlorinated PVC pipes were used) have few right-angle turns, allowing for uniform water pressure throughout.

Each toilet and kitchen has separate provision for

supply of natural spring- and well-water. The toilets have hot water supply, that comes either through the solar water heater or the electrical geysers. They have separate septic

The compressive quality of brick and stone and the tensile nature of concrete afford the house a contemporary expression



Reinventing ancient methods on-site gave the project an open-ended plot to fashion and meld the old and the new

look. Brown China mosaic was laid over RCC coping, vault roof, dome and concrete shell roof to match the surrounding earth, while blue China mosaic was used to border the swimming pool.

With the theme of basic earth colours in mind, mirror-finished, golden brown Jaisalmer stone was used for the ground floor, while Shahabad tiles on the verandah give a warm, rough finish. Dark brown railway sleeper wood was used on the mezzanine and pinewood for the furniture.

Indigenous plants were preferred in the landscape as they require less maintenance and even have medicinal properties. The fertilizers too are organic, made through processes such as vermi-composting. The landscape around Moonlight has been kept wild and raw, to retain a natural feel. Says Mahesh, "After a conceptual drawing, I did not make any working drawings. Neither did I have a structural engineer, civil engineer or site supervisor for the project.

With its unconventional and orthodox design, most structural engineers would have favoured a framed structure. It wouldn't suit the purpose and would have added to the cost. In a frame-structure, you make a partition wall, which adds load to the structure and then you plaster it, consuming more cement (which means more carbon emission). In a



load bearing structure, each and every brick and stone is laid for a reason."

Moonlight was built manually, without modern implements such as cranes, using standard shuttering to save on costs. Mahesh also relied on ancient methods and technology, even invented on-site methods to cut down the costs. For instance, in the arches, a 9" thick brick wall without mortar was constructed as shuttering. The gaps between the bricks were filled with dry sand. The top of the

shuttering was done as a smooth curve by using mortar. Arch bricks were laid over this smooth curved surface. After the arch was complete, these shuttering bricks were removed and reused for the next. A similar method was used for the shuttering of the vault and the dome.

The local labourers who understood the language of on-site instructions worked using their innate knowledge and common sense, though they never had made arches, vaults or domes before. The whole idea was not explained to them beforehand. Instead, Mahesh gave them a 15-day work plan and supervised it.

Moonlight stands as an expression of man-made beauty, which has an art value, quite like Persian carpets or hand-made pottery.

The overall design was in keeping with the style of the region, being as close to nature and with minimal concrete intrusions