INDIA: FROM A PHILOSOPHY OF AGES, ARCHITECTURE FOR TODAY

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Born in 1930; studied architecture at the University of Michigan and the Massachussetts Institute of Technology; has been in private practice in Bombay since 1958. His work may be seen in various parts of India. In 1974, *Time* magazine nominated him as one of 150 persons around the world in its cover story on new leadership. He was awarded the Padma Shri by the President of India; in 1979 he was made an Honorary Fellow of the American Institute of Architects; in 1980 he was awarded an Honorary Doctorate by the University of Michigan; in 1984 the Royal Institute of British Architects Gold medal by the Prince of Wales; and in 1987 the Indian Institute of Architects Gold Medal.

People living in warm climates develop very specific relationships to their environment. During the day we need but minimal protection, such as a *chhatri* (an overhead canopy); in the early morning and at night, the best place to be is outdoors, under the open sky. When we walk on a beach in the evening, or cross a desert and enter a house around a courtyard, it is the quality of light and the ambience of moving air that form the essence of our experience. At these moments, responses are triggered in our minds, responses conditioned by thousands of generations of life on this planet. Perhaps they are primordial memories of a sacred landscape, of a lost paradise. In any event, they condition very powerfully our perceptions of the environment. Thus while the little red schoolhouse is the educational symbol of North America, in India—as in most of Asia—it has always been the guru sitting under a tree. Not only does this image of the Lord Buddha and the peepul tree seem more sensible to us than sitting inside a stuffy box; it also appears far more conducive to enlightenment.

Religious ceremonies in Asia have always emphasized these open-to-the-sky spaces, and the quasi-mystical sensations they generate within us. Hence, while the cathedrals of Europe (like the little red schoolhouse) are all variations of the closed-box model, the great Islamic mosques in Delhi and Lahore are at the other end of the spectrum: they consist mainly of large areas of open space surrounded by just enough built forms to make one feel 'inside' a piece of architecture. So, too, the great Hindu temples of southern India are experienced not just as *gopurams* and shrines, but as a ritualistic movement through the sacred open-to-the-sky spaces that lie between them. This movement, called the *pradakshina*, is a pilgrimage around the inner sanctum. In the example of the Buddhist stupas, this *pradakshina* takes the form of a circular pathway around the central stupa—which is a dome structure of solid earth; in the centre of which is buried a wooden column representing the *axis mundi*.

This ying-yang relationship (open-to-the-sky space surrounded by solid built-forms, and vice versa) generates figure/ground patterns in which the open spaces can act as areas of visual rest between the enclosed volumes—a principle of enormous potential for museums. For not only does this pattern create the opportunity to provide a combination of concentration and relaxation, it also opens up the possibility of offering the visitor alternate paths through the various sections of the museum. As we are all aware, many visitors to large museums are

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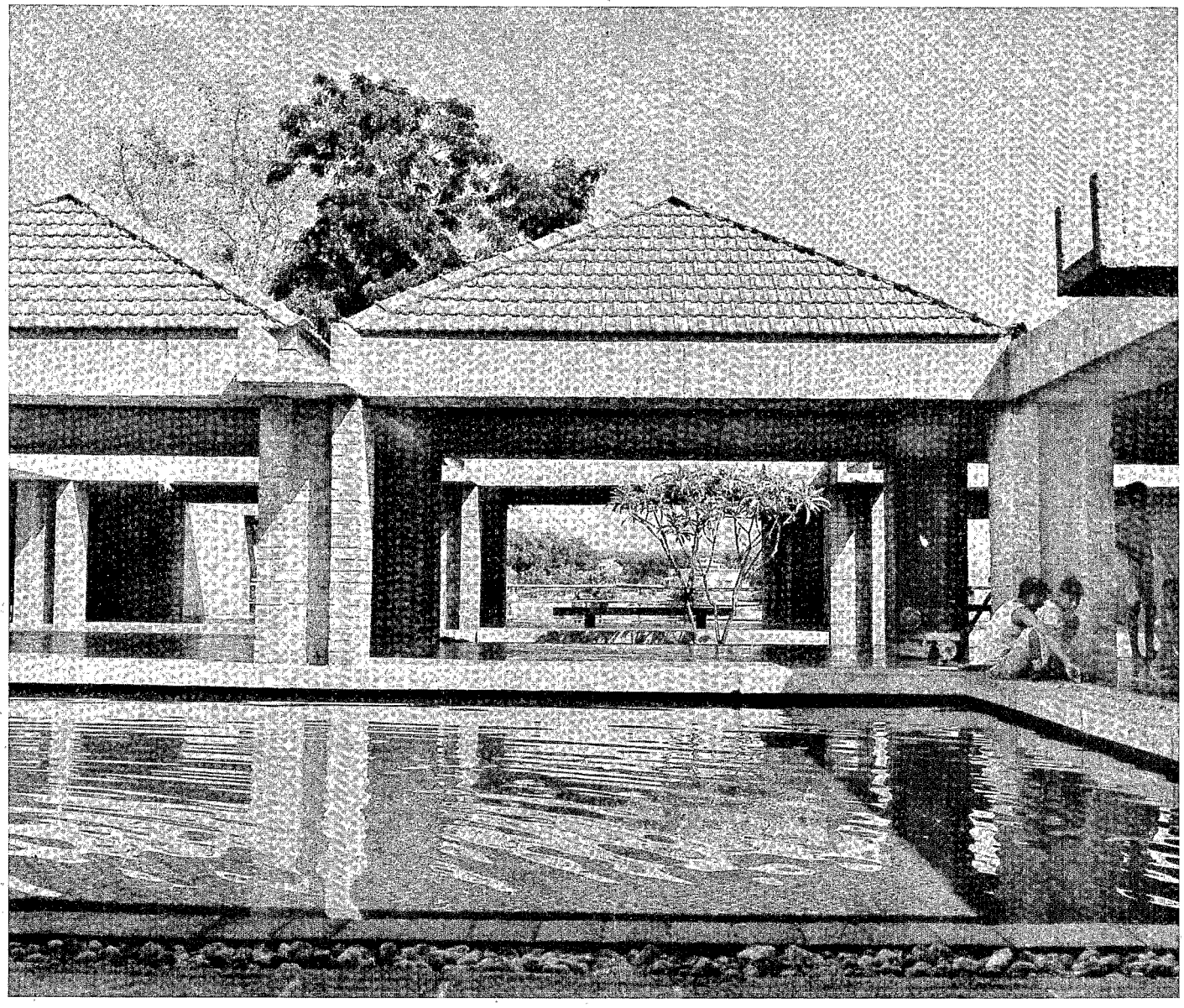


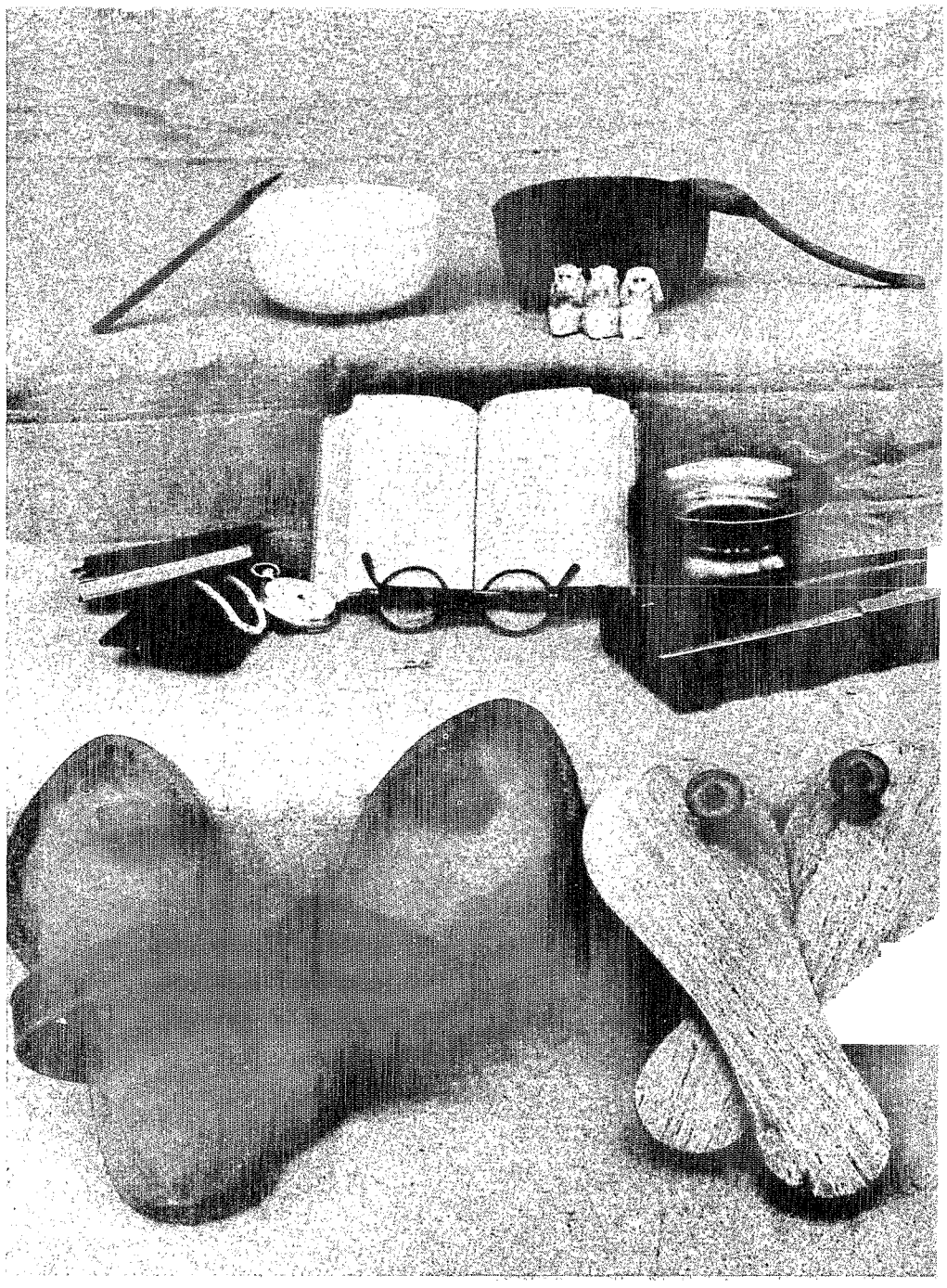
interested in only a portion of the material; yet they have to drag their weary feet through endless corridors to reach the particular collection in which they are interested. In fact, since a major cultural centre like the Louvre, in Paris, actually consists of several large-size museums strung along in a row, like pearls in a necklace, why could not these units be organized in a manner which allows independent access to each one? Futhermore, if the open-to-the-sky space is conceived as a pedestrian spine, then the spectrum of choices available to the visitor can be maximized—and experienced with delight!

These various ideas have gradually coalesced in my mind over the years into a particular typology of museum architecture, one which seems to have considerable advantages in the Indian context. It is illustrated here by four projects. The first, a Memorial to Mahatma Gandhi at the Sabarmati Ashram at Ahmedabad where he lived, was designed thirty years ago and was seminal to my conceptualization of this process. The second, Bharat Bhavan (a museum for the visual and performing arts in Bhopal), carries the theme further. In the third, the Crafts Museum in Delhi, the pedestrian path has become literally a metaphor for the Indian street as it moves from village to temple to palace. The fourth, the Jawahar Kala Kendra in Jaipur, reassembles these ideas within the parameters of the ancient Vedic concept of architecture as a model of the cosmos.

Homage and treasure trove (1958-63)

This memorial museum is erected in the Ashram where Mahatma Gandhi resided from 1917 to 1930 and from which he started on his historic march to Dandi.

Gandhi Memorial Museum: open modular units around the watercourt.



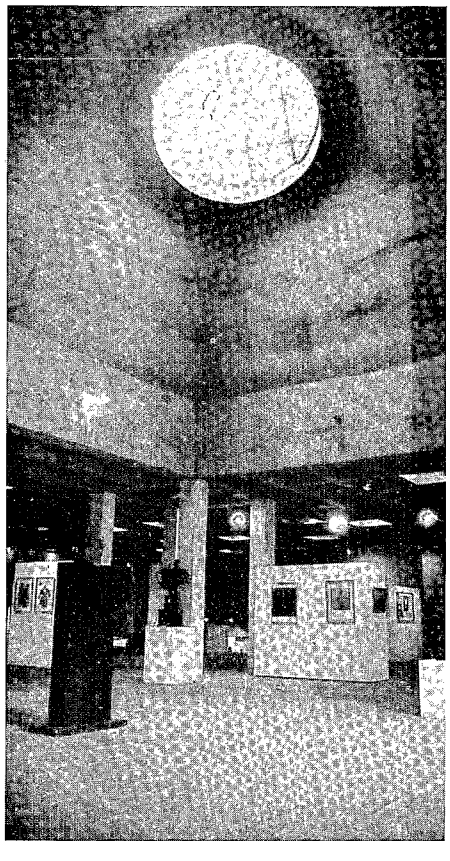
Mahatma Gandhi's last possessions.

Built by the Sabarmati Ashram Trust in homage to the memory of the Mahatma, and to propagate his ideas, the Sangrahalaya was inaugurated in 1963 by Jawaharlal Nehru. In it is housed a priceless treasure trove of letters, photographs, and other documents which trace the freedom movement launched by Gandhi, including hundreds of volumes edited by his secretary, Mahadev Desai, as well as the 30,000 letters written by Gandhi or addressed to him, some original, others on microfilm.

The materials used in the construction are similar to those in the other buildings in the Ashram: tiled roofs, brick walls, stone floors and wooden doors. The only addition is the concrete channel that acts as beam and rainfall conduit, and which permits expansion for additional construction to be added in future. No glass windows are used anywhere in the building (in deference to Gandhi's rejection of modern industrialized products), light and ventilation being provided by operable wooden louvres.

These elements combine to form basic modular units 6 × 6 m, in a typology analogous to the villages so central to Gandhi's thinking. They are grouped in a casual meandering pattern, creating a pathway along which the visitor progresses towards the centrally situated water court (refreshing in the dry heat of Ahmedabad). Some of the units are enclosed by walls; the various display-cum-study places so created being counterpointed by areas of visual rest where the visitor can meditate. This configuration generates a wide spectrum of conditions, varying all the way from closed-box to open-to-the-sky, the modifications from one zone to another along the spectrum being signalled by subtle and almost imperceptible changes in light and air movement.

Bharat Bhavan: the courtyard.



Bharat Bhavan: the Gallery of Modern Art.

Because the collection will, by its very nature, be added to in time the Sangrahalaya is a living structure which can grow and modulate. Recently, more units were added, extending the pattern. This process will continue as more photographs, letters and other documents are collected, each generation of young Indians making its contribution and paying its homage to the Mahatma.

Progressing casually (1975-81)

The site for this arts centre is on a gently sloping plateau overlooking the lake at Bhopal. The natural contours of the site have been used to create a series of terraced gardens and sunken courtyards—off which are located a number of cultural facilities. These cover a wide spectrum and include a museum of tribal art, a library of Indian poetry (in all the seventeen major languages), galleries for contemporary art, workshops for lithography and sculpture and a studio for an artist-in-residence. In addition, Bharat Bhavan houses a fully fledged theatrical

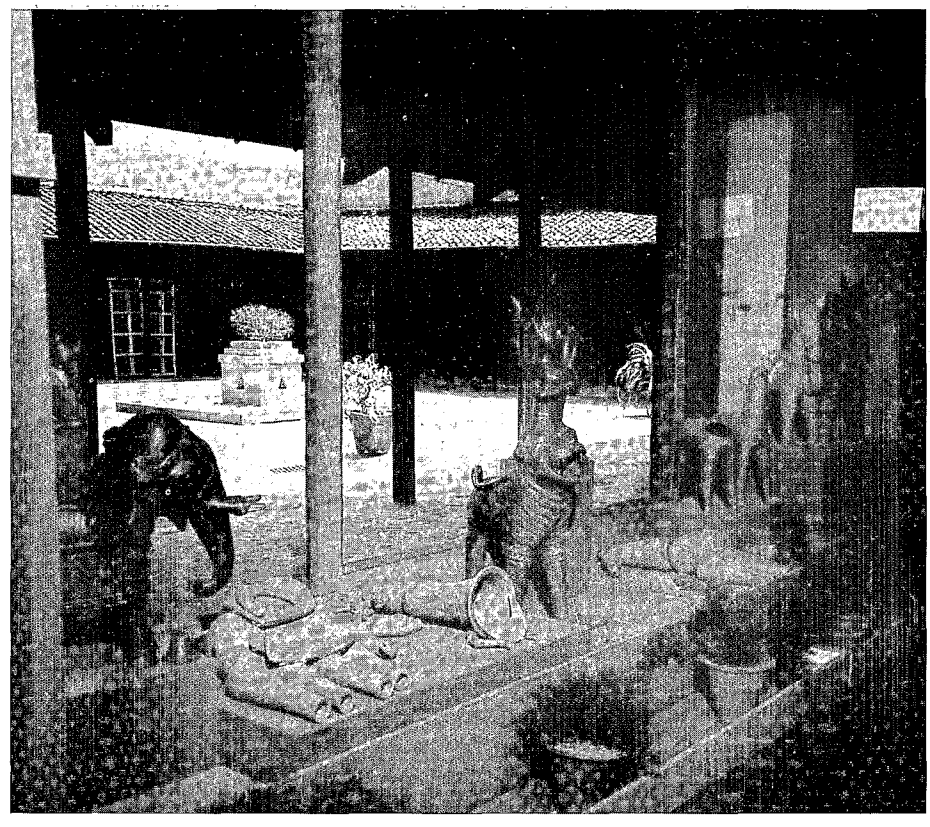
Crafts Museum: exterior of a *haveli* from Gujerat.

repertoire company and extensive facilities for the performing arts, including the *antarang* (indoor auditorium) and the *bhairang* (open-air amphitheatre) overlooking the lake.

As one progresses through the terraced gardens and courtyards, one comes across these various facilities in a casual manner, making them easily accessible to the citizens of Bhopal. Illumination and ventilation within the building are provided by overhead lights from the concrete shells and from slots along the terrace parapets. In addition, the openings onto the courtyards and terraces have two sets of shutters: the inner ones consist of a combination of glass and hinged panels for ventilation; the outer ones consist of large wooden doors, closed at night for security.

As varied as India (1975)

The great temples of the past (at Bali, Borobudur, Srirangam, etc.) were structured around sacred open-to-the-sky ceremonial pathways, a concept, as



Crafts Museum: a display of terracotta figures.

mentioned earlier, of crucial relevance to architecture in warm climates. This Crafts Museum, casual and accepting of the artisan's vernacular, is organized around such a central *pradakshina*. As one travels down this veritable spine, one catches glimpses of the principal exhibits displayed on either side, e.g. the Village Court, the Temple Court and the Darbar Court. One can visit any particular exhibit or, alternatively, progress through all the various sections in a continuous sequence.

At the end of the sequence, one exits via the roof garden, which forms an amphitheatre for folk dances, as well as an open-air display area for large terracotta horses and other handicrafts. The images of these scaleless non-buildings echo the old bathing *ghats*, such as those at Varnasi, or at the incomparable Sarkhej in Ahmedabad.

The initial stage of the Crafts Museum was completed in 1977. The final stage is currently under construction. In it, ancient buildings of extraordinary merit (for instance, an old wooden *haveli* from Gujarat and a stone temple from Tamil Nadu) are being incorporated into the new construction to make the architecture a collage as varied and pluralistic as India herself.

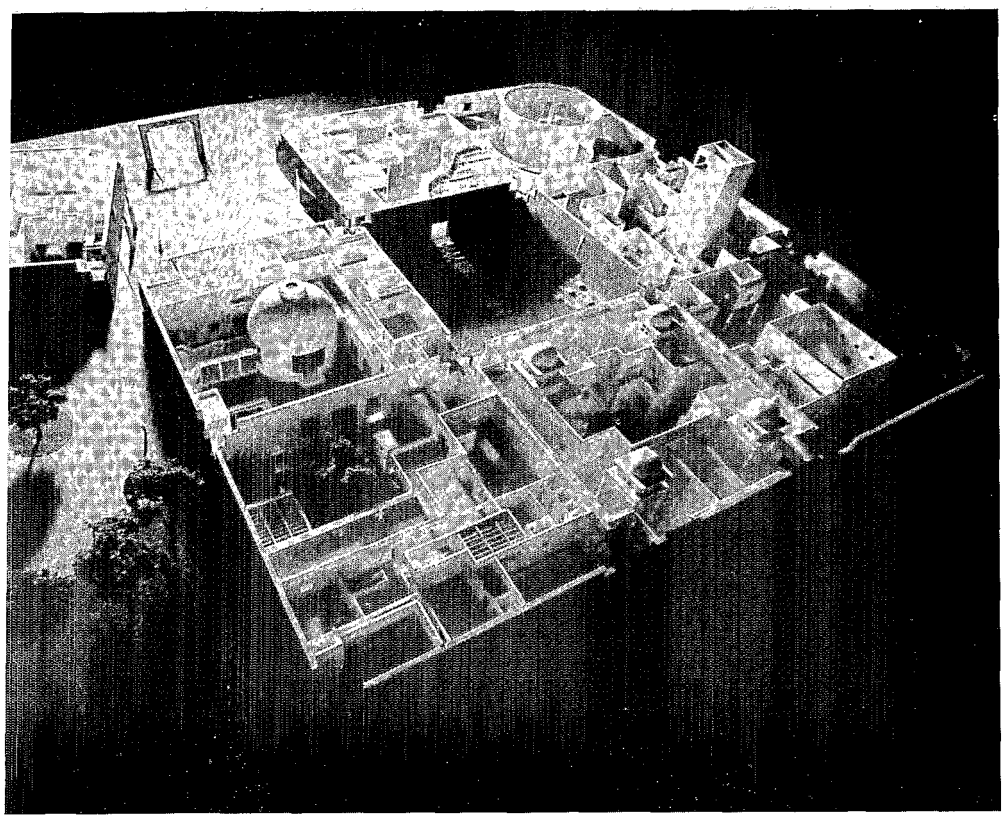
Model of the cosmos (1986–)

This museum-cum-cultural centre for the city of Jaipur, dedicated to the memory of India's great leader Jawaharlal Nehru, is based on the ancient Vedic concept of architecture as a model of the cosmos. These mythic beliefs, which go back thousands of years, perceive the forms and events which constitute the visible world as being significant only to the extent that they help us understand the non-manifest layers that lie beneath. Magic diagrams, called *yantras*, explain the true nature of the universe. Of these, the *vastu-purush-mandalas* form the basis of architecture. Thus buildings are conceived as models of the cosmos—no less!

Each *vastu-purush-mandala* is a perfect square, subdivided into identical squares, creating a series which starts from 1 and goes on to 4, 9, 16, 25... right up to 1,024. In temple architecture, the most commonly used *mandalas* are those of 64 and 81 squares, with the various deities allocated places in accordance with their importance and with the mystical qualities inherent in the diagram. The *mandala* is not a plan; it represents an energy field. Its centre signifies both *shunya* (the absolute void) as well as *bindu* (the world seed and the source of all energy). In all *mandalas*, at this centre is located *Brahmana*, the Supreme Principle. According to Hinduism, when the cycles of reincarnation are finally over, and the *atma* (individual soul) is released from each one of us, it goes to *Brahmana*, that is, to the centre of this energy field.

The analogy to the black holes of contemporary physics is truly astounding. Energy devours itself, and the individual soul (after completing all the cycles of reincarnation) goes not to an eternal reward in Heaven or in the Garden of Paradise, but down the vortex at the centre of the black hole. How incredible that such a concept should have surfaced so many thousands of years ago. As Bachelard has pointed out, the intuitive insight of the artist (or for that matter the seer) cannot be explained through the cause-and-effect structure of scientific reasoning, but, like a depth-charge, explodes in the centre of our being, releasing to the surface the debris of our unconscious.

Jaipur is a city built in the seventeenth century by the astronomer king, Maharaj Jai Singh. The master plan is based on the Navgraha, a *vastu-purush-mandala* of nine squares. In this unique city, Jai Singh embarked on a truly extraordinary adventure. He sought to combine his passion for two of the most powerful myths he knew: on the one hand, ancient and sacred yantric beliefs; on the other, the latest tenets of contemporary science.

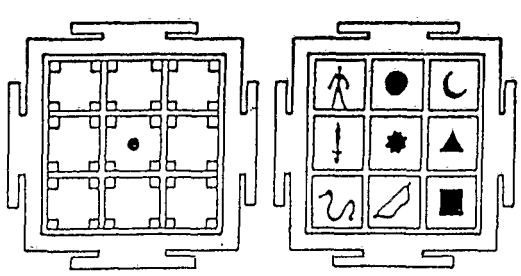


Jawahar Kala Kendra: a model showing the nine squares.

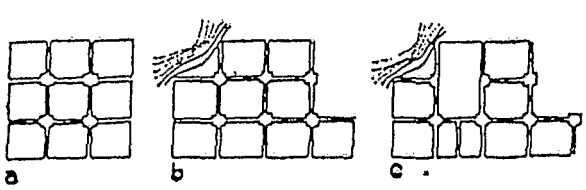
Hence his choice of the nine-square *mandala*, corresponding to the *navagraha* of the nine planets. The void in the central square he used for the palace garden, and because of the presence of a hill, a corner square was moved diagonally across.

The plan of the Jawahar Kala Kendra invokes directly the original *navgraha mandala*. One of the squares is pivoted to recall the shift in the original city plan (and also to create three entrances). The functions of the museum are disaggregated into nine separate groupings, each one corresponding to the mythic qualities of that particular planet. For instance, the library is located in the square of the planet Mercury which traditionally represents knowledge; the theatres are in the house of Venus, representing the arts; the central square, as specified in the ancient Vedic Shastras, is a void, representing the nothing which is everything. The external walls of each square are sheathed in red sandstone, in which is inlaid a white marble symbol of the corresponding planet.

Each one of these nine squares is 30 × 30 metres, defined by a masonry wall eight metres high. It is totally autonomous, connected to its neighbours only by doorways aligned centrally along the main north-south and east-west axes. This allows each of the squares to have its own archetectonic expression, true to its symbolic meaning and its function. Organizing construction on these principles allows considerable flexibility, since the contents of each square in the *mandala* can be designed—and constructed—at different points in time, which is a distinct advantage in the stop-go context of the Indian economy. The construction is of masonry walls with columns and slabs. Expansion joints run between the various squares, which allowed construction of the project to be undertaken simultaneously by three separate contractors, each working independently of the others. ■



Ground-plan of the Nat-Mandir in Konarak (left), corresponding to the divisions of the Yantra of the Nine Planets, or Navagraha (right). The symbols of the yantra are: square = Venus; bow = Mercury; snake = Ketu; triangle = Mars; lotus = the Sun, at the centre; sword = Rahu; crescent = the Moon; circle = Jupiter; man = Saturn. After the Mandala Sarvasva.



The plan of Jaipur city based on the nine square Yantra in which on square is displaced and two central squares combined.