

domus

INDIA052LA CITTÀ DELL' UOMO



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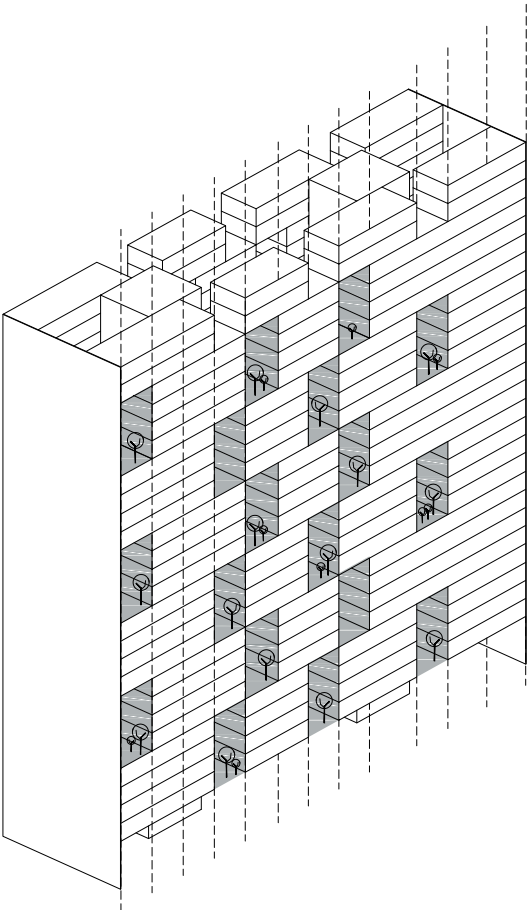
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Author	Design	Title
Kaiwan Mehta	16	Editorial Geometries of work and context
Issey Miyake	18	Confetti Ikko Tanaka Issey Miyake
Michele Lanza	22	The city of software
Kamu Iyer	24	The Past as Present: Pedagogical Practices in Architecture at the Bombay School of Art Structure and details
DI_Editorial	26	On inheriting a studio
Sumesh Sharma	28	Soghra Khurasani Vocabulary of the landscape
Freddie Ribeiro	38	BDP Public realm of design
Aparna Andhare	44	SpaceMatters Projects Contemporary museum for architecture in India Merging abstractions
Jasem Pirani Suprio Bhattacharjee	58	Urban Studio A contemporary vocabulary
	76	Domus MILLE Deyan Sudjic
	90	Domus MILLE Joseph Grima
	102	Rassegna Furniture
Alessandro Mendini	108	Feedback Alessandro Mendini's Milan



Cover: Rather than a solid block, the individual components of the *shikhara* of the temple in Barmer, Rajasthan designed by SpaceMatters, are offset from each other. This helps channelise more light into the inner sanctum or the *garbhagriha* of the temple. Seen here is the detail of the *vedika* or finial, when viewed from below.



Isometric drawing of the conceptual structure – Tropical Lagoon, Thane designed by Urban Studio.

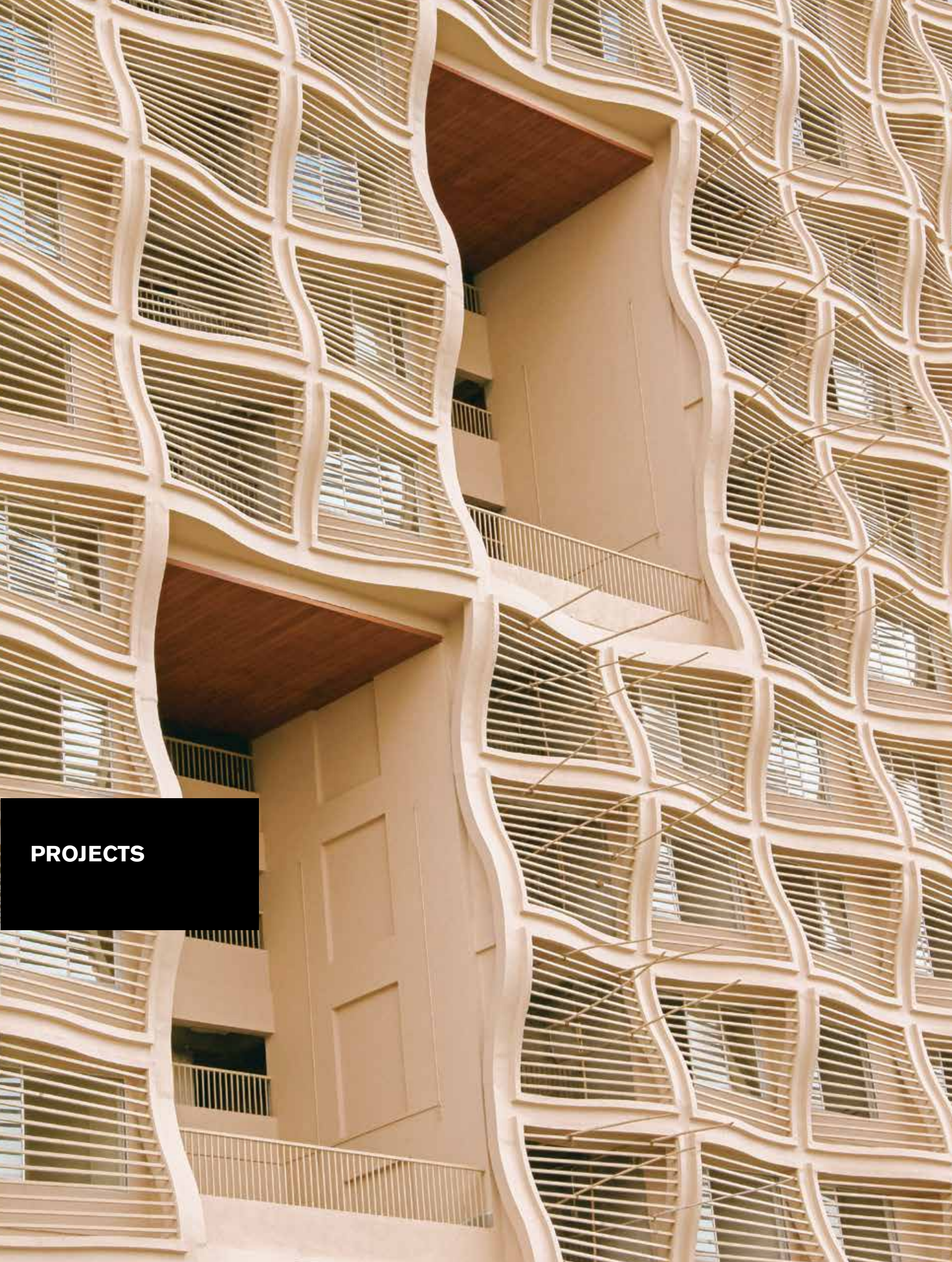
GEOMETRIES OF WORK AND CONTEXT

Kaiwan Mehta

As we close this double issue – a combined issue between June and July 2016, since Domus is 11 issues a year – I enter into a conference titled “*Between Life and Places*” based on the thematic *Biographies and the Production of Space*; the thematic I decided about 2 years ago for the residency programme at the Akademie Schloss Solitude in Stuttgart, Germany, in my capacity as chairman of the jury. The conference includes many jurors of the current cycle of fellows at the Akademie as well as many of the fellows present, marked specifically by two extraordinary keynote lectures – the first by Professor Ackbar Abbas from University of California, Irvine, USA, titled, *Posthumous Life: Translation, Politics, and Spaces of Deception* and the second, by independent curator and cultural theorist Nancy Adajania from Mumbai, India, titled, “*I believe that I can travel to the stars*” – *Reflections on the Emerging Organic Intellectual in India*. Geographies are intense zones of human action and interaction – from market-places to migration, and homes to cyber communities. Spaces are not simply containers within which people live and work; spaces are a product of human lives and the actions that take place in those spaces. Exploring the relationship between the physical armature of a place and the larger sphere of political and cultural action and production is something that this theme proposes to engage with. In this exploration, we propose to engage with biographies – the vectored lives of people and things; biographies are complex journeys of individuals within multiple lives and spaces. The biography is proposed as a means to exploring the culture of spaces and the sciences of its production. Biographies could be, as Gertrude Koch in her Foreword to the English translation of Siegfried Kracauer’s *Jacques Offenbach and the Paris of His Times* says – “channels of communication by means of which subjectivity and facticity engage in a constant nervous process of dialogue”. Places and geographies are active zones of politics and cultural processes and it is in the attempt to understand the complexity of what makes a place that we propose to work with the lives of people and objects that are part of these places – their structure, their composition, their occupation, and their journeys. What is the relationship between life and places, politics and spaces in the everyday lives of people and their societies, their objects and their stories? As architects we constantly see ourselves as producers of spaces, and buildings as spatio-

formal entities – but one could safely say that we miss to recognise the multiple histories, and many lives and after-lives that exist beyond the single individual architect or designer, that shapes the life and look of spaces as well as places. We have become adept at talking about contexts – from where people come, into which people build and produce – but our sense of ‘context’ is now become a blinkered entity – one desperately stuck to the idea of geography – which manifests itself in identification of land and soil, climate and a few architectural elements; a very narrow-minded sense of doing things! We forget that we all, today especially, belong to many context from across the world – our readings, our seeings, our references come from many geographic and many intellectual traditions, from many places. We draw from diverse biography of ideas. This is not a call to disregard the idea of ‘locality’ or zones defined as regions or nations – but is an articulation to ask one to recognise the diversity of traditions (intellectual, and other) and experiences (readings, people, ideas) we are as human beings composed of. Our designs and architectural articulations do not escape this – and to fool yourself in believing that there is something in design that makes it exclusively Indian or not so, will only be an unproductive excursion, which may even be harmful. Process of education constantly encounters this problem – where does one draw from in setting up curricula? In education there are established genealogies of thinkers, theories, and texts, but after a basic introduction, these established genealogies restrict the possibilities by which a student understands his/her zones and methodologies of action/practice. Processes of thinking are often more crucial than just the set of theories or different thoughts established over time and history. Processes of thinking are often embedded in practices and the crafts that people work with. To excavate and explore, and firstly closely and attentively listen to the experience of practice – is an absolutely necessary mode of education. As one is also planning for a new academic year one is crucially confronted with these questions – especially in programmes that engage with the teaching of histories, theories and forms of criticism. We often forget that history, theory, or criticism, are essentially forms of practice, modes of action, and forms of doing – and not simply about reading a set of established texts and thinkers. As educators, as thinkers, as critics who actively produce the fields of action – design, architecture, and the politics of culture – the

engagement with relationships of living and space-making is crucial to understand. It is a delicate zone with many ambiguities and details that are often difficult to understand – but as professional crafters of spatial formulations (buildings) an awareness of this central character of our work is necessary – the birth, life, and after-life of places and spaces. Individual lives composed of actions and thoughts are traces, residues as well as ingredients of spatial geometries and geographies, co-producing as well as reviewing the history and poetics of spatial atmospheres. Spatial atmospheres are physical realities that are the scenarios and contexts within which civilisation and human action unfolds. These atmospheres are heterogeneous compositions – they shape their layers differently in differing contexts and histories, as they continue to network across histories. These atmospheres are constructed out of physical media – where individuals craft environments that exist within such atmospheres, producing a measure and scale for the atmospheres themselves, periodically redrawing geometries of these contexts too. Actions, thoughts and the craft that individuals work with, allowing them to make-interact with, review-challenge, the space-atmospheres is a constant area of investigation and enchantment. The individual within the collective, the individual within the network of atmospheres, often charts a trajectory that allows for a creative understanding of contexts and spaces we occupy in everyday lives. The biographies of such trajectories could occupy the shelf of inquiries in one’s ‘cabinet of thinking’ on contemporary culture, and the places of its production. **km**

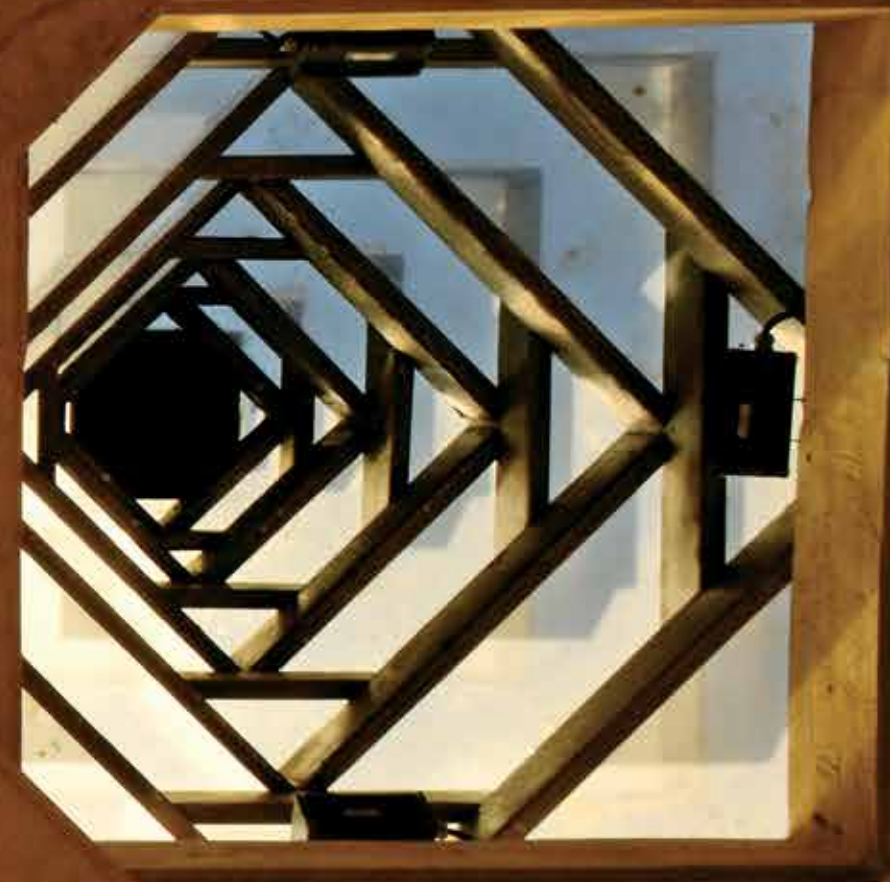


SpaceMatters

MERGING ABSTRACTIONS

A temple in Barmer, Rajasthan filters structured symbolism of the conventional temple architecture typology, reinterpreting it to evolve its form – one that combines the heavy materiality of the stone with the lightness of the structure. It also draws strong reference to its dry, arid context with use of local materials and craftsmanship – giving it the appearance of having risen from the surrounding sands

Text Aparna Andhare
Photos Akash Kumar Das, SpaceMatters





The historical lineage of Hindu temple architecture in India is broadly categorised into two sections: the Northern Nagara style and the Southern, Dravida. These categories are further explored, and each part of the subcontinent has experimented with form, structure, use of material and decoration. Evolving from timber and wooden architecture to the use of stone, or venturing into natural cave excavations, just studying temples makes for a daunting enterprise, especially when one considers the visual, socio-cultural and

economic ecosystems that surround a temple site. Contemporary temple architecture has absorbed many cues from the past, works with prescriptive texts, and reflects contemporary evolution of iconography. In the decades after independence, there was a merging of nationalist sensibilities, like the inclusion of figures of the *Bharatmata* and freedom fighters, to the existing repertoire of mythological sculptures, divine figures and ancillary deities. The structure of the temple itself is now being examined, and developments in technology and

Opening spread: detail of the finial, or the *Vedika* from below. This page: the temple is constructed almost entirely with local Jaisalmer stone. Opposite page: rather than a solid block, the individual components of the *shikhara* of the temple are offset from each other, raining light into the inner sanctum or the *garbhagriha* of the temple; below: the juxtaposition of water and stone



materials allow architects and design firms to reinvent structures and typologies, while keeping crucial features intact. Much of contemporary temple aesthetic, draws inspiration from Rajasthan, both for form and the profuse use of marble in the facade. While many temple complexes, especially large ones, seem to create a disjointed, decontextualised, theme-park of iconography and symbolism, some temples focus more carefully on local traditions, and surroundings in their constructions. Incorporating modern technology with traditions and iconography, Space Matters, a New Delhi-based design firm, has built a Temple in Stone and Light, in Barmer in western Rajasthan. While it looks like a traditional temple from a distance, different only in the way in which it reflects light, the innovations in design are apparent when a visitor gets closer. The *Shikhara*, or the temple spire, usually a closed structure crowning the *garbhagriha* or sanctum sanctorum, is a complex interlocked series of stone slabs held together by steel plates and studs, allowing light to breeze in and out, while giving the axis mundi a receding and recursive visual illusion. The horizontal ribbed structure may seem to be inspired from ancient Shivite temples, as the form is maintained and the commonly understood vocabulary continues to hold true even in this abstraction. The structure, even on the *manadapa* or porch, comes from a *yantra* system of arrangement. A *yantra* at its most basic can be understood as a diagram of a prayer or belief system – a temple dedicated to Shiva, also looks at the basic ideas of creation, where the divine masculine, Shiva, merges with the divine feminine, Shakti, to create the universe. A *Shivlinga* is an abstraction of is merging and remains one of the most worshiped icons in Hindusim. Staying faithful to the worship of Shiva, his *vahana* or ride, Nandi, patiently waits outside the sanctum. The rest of the temple is minimally decorated, relying on nature, the wide expanse of Barmer, the geometric design of the landscape to fill the temple complex. Made by Jaisalmer stone, the temple





incorporates smart building techniques to maximise both light and a free flow of air. Even in the evenings, LED lights illuminate the temple, highlighting its interesting design and the *yantra* motif. Glinting metal facades on robust stone masonry, interlocked with precision, reflect not only its surroundings but also its patrons. A temple rarely stands alone in the Indian subcontinent, and its complex is a shared public space. The surroundings play an important role in bringing the community together, offering recreational spaces, safe family outdoor areas, and places of contemplation. Perched on a constructed height, with rambling slopes, a view of the reservoir and situated diagonally opposite an imposing plant, the Barmer temple invites villagers and visitors from the plant into its serenity. Effectively landscaping the complex with the water from the nearby power plant, creating green spaces and planing saplings, the Barmer temple, promises grow into an industrial-themed oasis, where faith and technology seem to co-habit peacefully. @



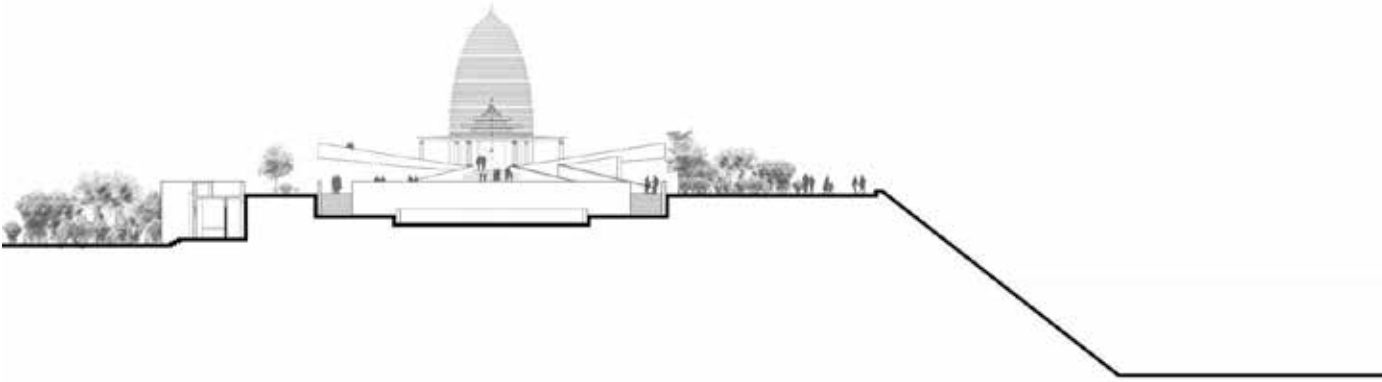
Opposite page top: view of the finial, or the *Vedika*. Below: at night, the temple made in local Jaisalmer stone, exudes an ethereal yellow glow. This page, top left: the temple with prominent industrial structures as its backdrop. Top

right: the *Nandi* bull, the gatekeeper of Shiv and Shakti, sits at the entrance of the temple structure. Below: the complex is effectively landscaped with the water from the nearby power plant, creating green spaces

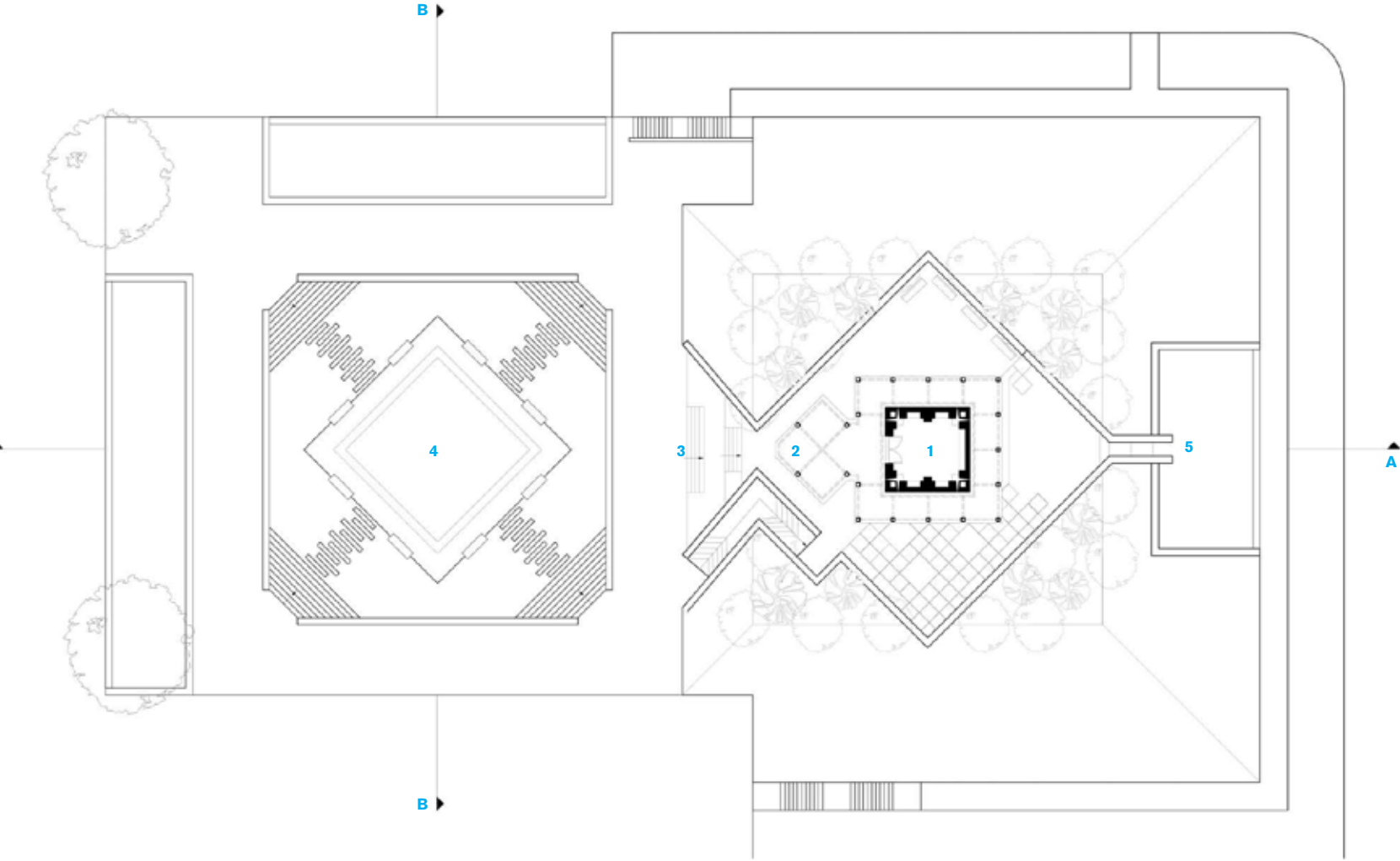




SECTION AA



SECTION BB

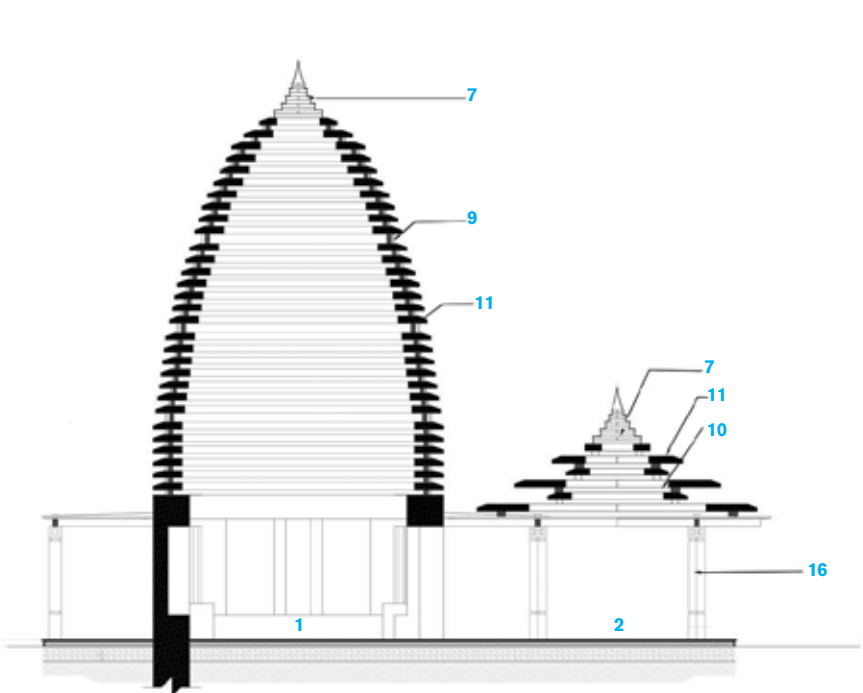
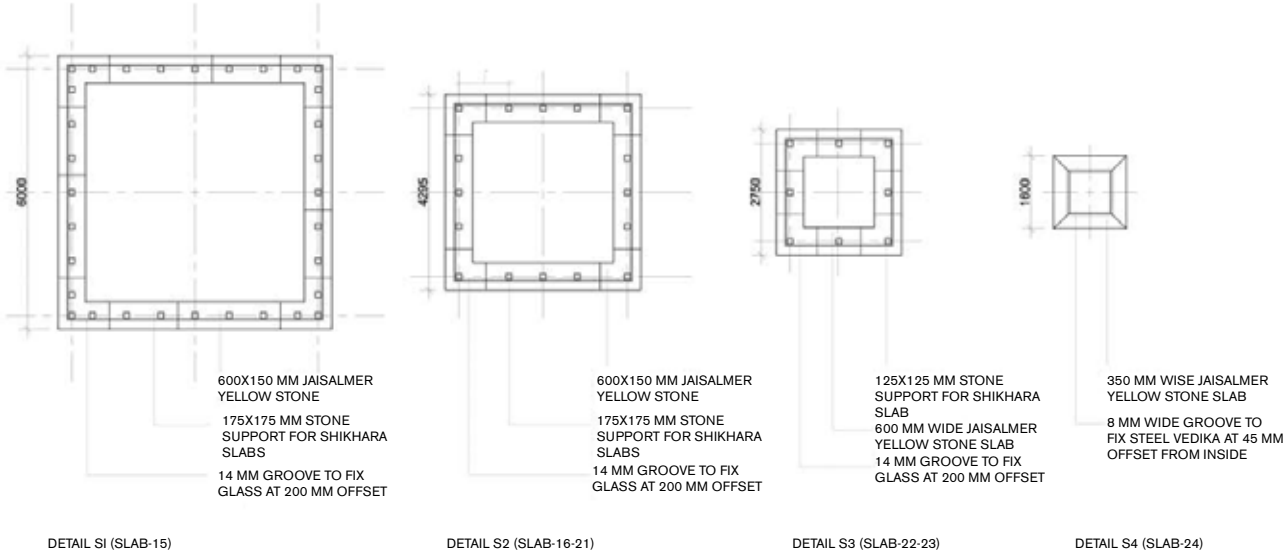


SITE PLAN



PLAN

EAST SIDE ELEVATION



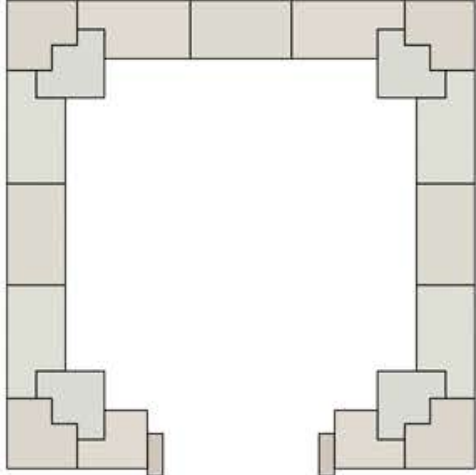
- 1 Garbhagriha
- 2 Mandapa
- 3 Entry
- 4 Pond
- 5 Water Body
- 6 Embankment Covered With Grass
- 7 Vedita Made Up Of Stainless Steel And Fibre Glass
- 8 600 Mm Thick Jaisalmer Yellow Stone Slab
- 9 12 Mm Thick Glass / 6 mm Thick Acrylic
- 10 75 Mm X 75 Mm Supports
- 11 600 Mm Thick Jaisalmer Yellow Stone
- 12 Reinforced Retaining Wall
- 13 Gravel Covering
- 14 Planted Bed
- 15 200 Mm Grass Area
- 16 Support Columns Of Jaisalmer Yellow Stone

SECTION THROUGH TEMPLE

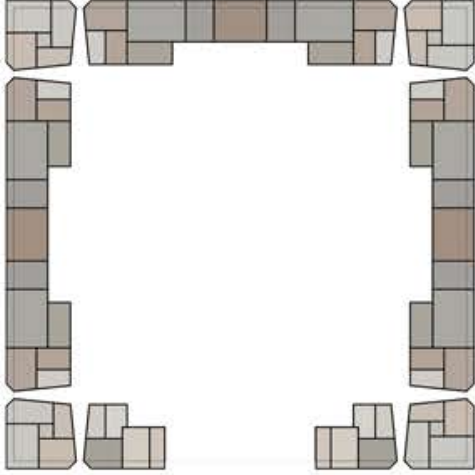


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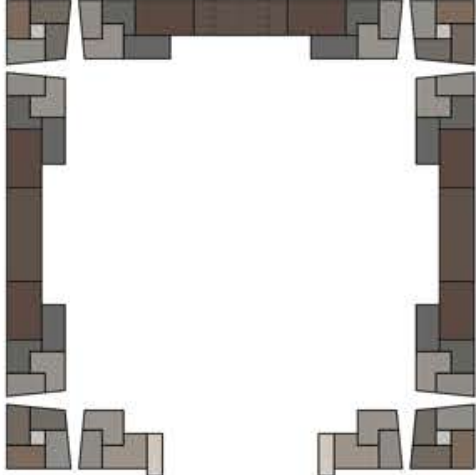
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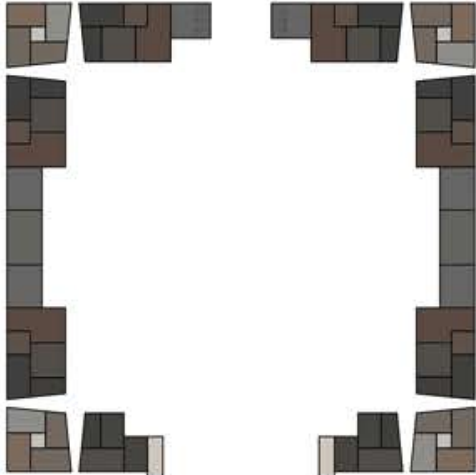
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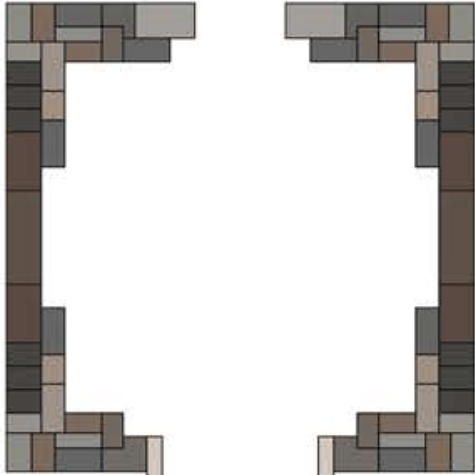
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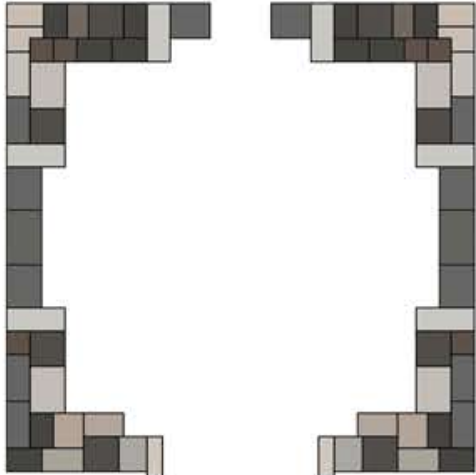
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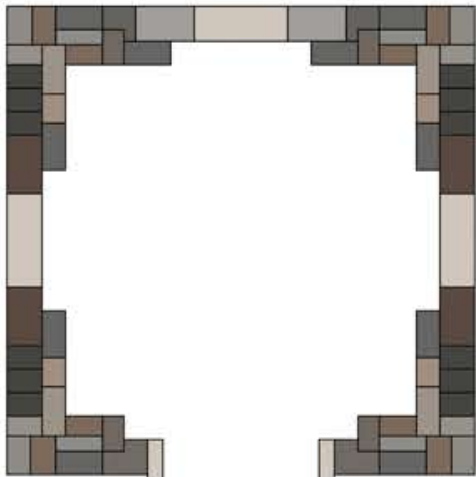
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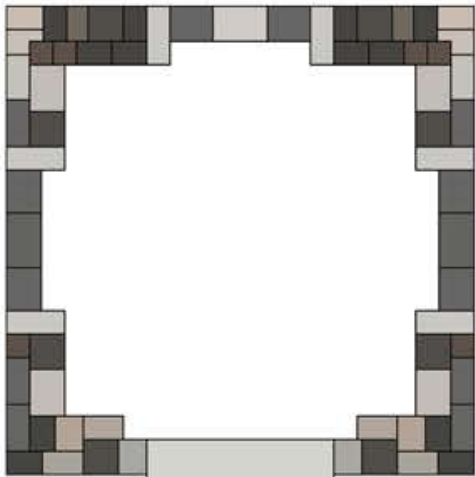
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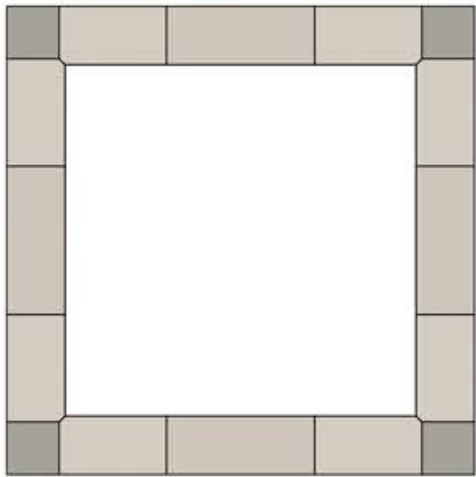
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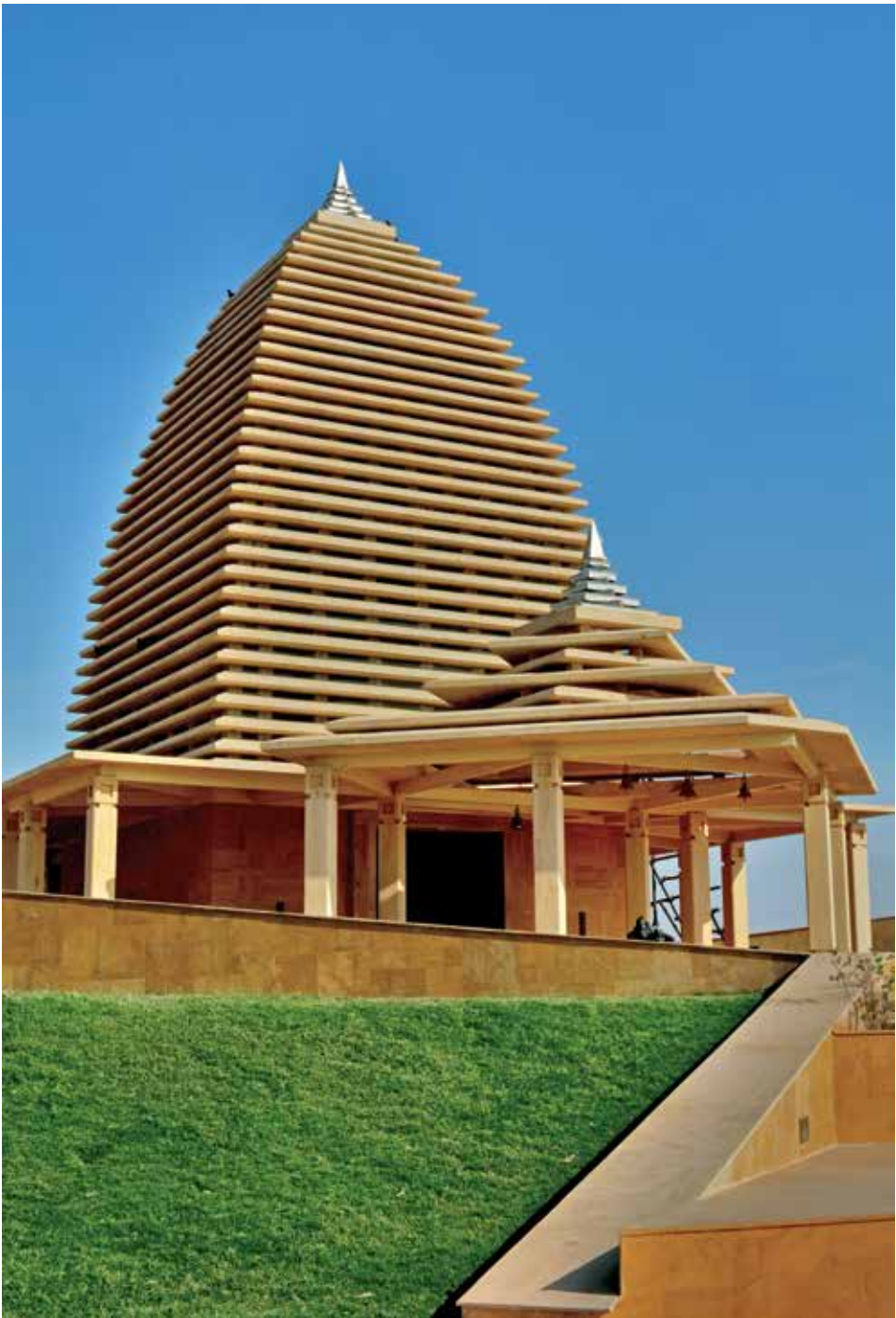


LEVEL-8



LEVEL-9

SCHEDULE OF STONE MASONRY



Project Title
Temple in Stone and Light
Location of the project
Barmer, Rajasthan, India
Client
JSW Raj West Power Ltd
Architect
SpaceMatters
Design Team
Anand Lakhani, Juhi Mehta, Rishi Suman, Adarsh Saravanan, Sneha Kathi, Waseem Ahmad
Site area
4360 m²
Built-up area
138 m²

Typology
Religious
Design Lead
Amritha Ballal, Suditya Sinha
Civil Contractors
KS Constructions
Structural Design
Sanjeev Aggarwal - Ace Designs
Project Management
Kulwinder Singh - Design Roots
Project Management
RWPL - Civil Works Department
Services
Umed Khan - Engineering Consultancy Services
Site Supervision
Civil Works Department - JSW RWPL

Vastu Consultant
Ashok Sharma
Advisor
Adam Hardy, Vishakha Kawathekar, Moulshri Joshi
Date of commencement of construction
April 2014
Date of completion of project
Phase 1 - March 2016

Top right: massive stone slabs on stone pegs form the *shikhara* of the temple. Right: the structural symbolism of traditional temple architecture was filtered to evolve the form

FROM THE ARCHITECT'S PROJECT DESCRIPTION

India has a glorious history of temple architecture. The desert state of Rajasthan, where the temple is located, has an equally diverse and refined heritage of buildings set in an unforgiving climatic zone. Given this legacy, to design a contemporary Hindu temple set in the sand dunes of Rajasthan has been an enormous challenge. Lord Shiva, to whom this temple is dedicated, dwells in paradoxes and apparent dualities. In Hindu scriptures and mythology he manifests as both – the Preserver and the Destroyer. In unison with goddess Shakti, he transcends the duality of the masculine and feminine principle. Like other such perceived dualities, masculinity and femininity are often approached as a continuum rather than a binary in Indian philosophy and mythology. This symbolism needed to be translated into evocative spatial clues to deliver this project. The architecture of the temple combines the heavy materiality of the stone with the lightness of the form, where the solid looking stone exterior dissolves as the night dawns and transforms into a delicate lantern in the dunes. During the day, light filters into the sanctum of the temple. At night, light turns the temple inside-out, extending an invitation to those outside while rewarding those within. This gesture also subtly seeks to illuminate the need for inclusion in contemporary religious spaces, which still tend exclude based on old age biases of gender, class, caste or orientation. The state of Rajasthan is known world over as the source of stone and stone craftsmanship. We sought to celebrate this heritage. The local Jaisalmer Yellow Sandstone was our choice of stone – its glowing surface reflects that golden desert sun that is strongly associated with Rajasthan. The yellow sandstone gives

the temple an appearance of having risen from the surrounding sands. The pure compression structure is reveals through each course and component that forms the superstructure. The design – with its strong form, stark quality and play of light on warm stone – seeks to evoke visual and tactile senses of the worshiper. The stainless steel ‘*shikhara*’ or the peak atop the golden stone, catches the light during sunrise and sunset and also celebrates the legacy of the organisation that commissioned this building. At different times of the day, from different directions, the temple is heavy and light, solid and translucent, valid and void, past and present.

Brief
The client’s brief was to construct a temple within the premises of their power plant in the village of Bhadresh, Rajasthan, for their employees and for the local community. With prominent industrial structures as a backdrop, the brief was to evolve a form intended as a contemporary interpretation of a traditional temple.

Genesis of form
Structured symbolism of traditional architecture was filtered to evolve a form that represented the contemporary times. We wanted a space that could evoke spiritual energy by referring back to the roots of symbolic nature of a Shiva temple.

Evolution of design
Why Stone?
The traditional Indian temple is strongly associated with stone – a testimony to the materials beauty, strength and timelessness. In the desert landscape of Rajasthan, stone architecture has been taken to great heights

combining the massive structural achievements of the fortresses and the intricate beauty of a delicately filigreed jaali. We had excellent quality of stone as well as the depth of skilled traditional craftsmanship and knowledge available which we wanted to utilise, therefore stone was the only material we considered. However, we also observed that many of the new designs incorporate stone primarily as a finishing element, and that we are losing the skills to seamlessly use stone in structural architecture as well as finishing. Therefore we decided to use stone as much as possible in the structural and masonry components and instead of hiding the details of structural construction, make them an integral part of the temple aesthetic. Cherishing traditional temple typology, the materiality in the design was inspired by the beauty of stone usage embraced by local construction techniques. Here, stone is not just a construction material but it is a source to evoke visual and tactile senses of a worshiper. Radically new way of using stone structure was intended to achieve beauty not through ornamentation but through usage of stone in its pure form. The ambition of the temple was to push the envelope in design, structure and execution using stone as the primary material. Especially since we were building in Rajasthan, we sought to celebrate and add to the rich heritage of stone craftsmanship, material and knowledge available to us.

Transformation through light
The temple re-interprets the traditional form and evolves a contemporary expression by capturing the essence of a traditional form. While in the first appearance the form of the temple evokes the lines of a traditional Shiv Temple, at closer glance the temple reveals a reimagining of the fractal geometry of the



This page, top and top right: the stones were sourced from different quarries, based on the criteria for compressive strength, finish, colour etc for different applications. These massive stone slabs are traditionally stacked on stone pegs similar to our temple construction details. Right and far right: the temple taking shape during its construction phase. Below: the circular opening that forms a halo around the *shivlinga* idol



traditional Indian temple structure. The interlocking stone joinery is employed to let light into the structure during the day and let light out during the night. While this being a simple temple structure, did not call for extensive services, a critical component however, was the lighting and illumination design. LED lighting was used to transform the structure in the night-time such that it appears as a glittering lantern in the stark desert landscape. The fixtures were discretely placed so as not to cause a visual clutter during the day. The lighting enhanced the form and played with the degree of transparency of the structure, turning it inside out. The yellow light deepened the natural yellow of the Jaisalmer stone of the temple.

Innovation in construction

The main innovation is in the *shikhara* of the temple which is supported by a solid dressed stone masonry. Rather than a solid block, the individual components of the shikhara of the temple are offset from each other using interlocking stone blocks with epoxy binder, raining light into the inner sanctum / *garbagriha* of the temple. The stone slabs are held at their joints by steel plates and studs. Locally available materials, colours and tonality complements the landscape. As the stone was used for structural purposes and not just decorative, the density of the stone was specified and these were specially sourced to meet the requirements. Marble was used for a finer finish and detailing on the landscaping, wall cladding and flooring, separate from the masonry structure. The massive stone masonry walls are designed to hold the stone *shikhara*. Niches and stone screens provide an element of lightness to the structure. The placing of the blocks and workmanship are such that one sees only hairline joints between the blocks. The slabs in

the *shikhara* with their interlocking blocks had to be designed in a manner that the structural stability was achieved and that symmetry was retained when the structure was strongly visible during the night. Each massive stone component had to be placed precisely in place to balance the various requirements.

Techniques through collaboration

Given the properties of stone as a material, it was challenging to execute the construction, as the site was located in Thar Desert with conditions of sandstorms, extreme heat and cold temperatures. The vision turned to reality through collaboration of design team with the project team, who had a strong background of industrial construction and with an artisans’ team who had a deep knowledge in traditional techniques of stone application. Design, engineering, project management, and traditional knowledge worked in close coordination.

Sustainability

For us, sustainability is about addressing socio-cultural, environmental and economic concerns in a balanced manner. Towards this end we chose to build with local stone and engage local craftsmen to reinterpret a culturally significant typology like a temple. This reduced costs as well as the environmental impact while celebrating and renewing the cultural heritage of the region. Due to the reservoir for the power plant in the vicinity, the area has a very high water table, unusual in the desert. The landscaping leverages this advantage to plant almost 200 trees (right now these are still saplings) that will create a wooded area in future to improve the microclimate around the temple.

Below: the temple complex at night, a glittering lantern in the otherwise stark desert landscape. Opposite page: the metal *Vedika* reflects the brilliant desert sun

