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Vimana: A Crisis of Translation

Apoorva Rao
Syracuse University

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Vimana

A Crisis of Translation

Apoorva Rao

Advisor: Richard Rosa

Syracuse University School of Architecture

Advisory Group: Richard Rosa, Elizabeth Kamell, Timothy Stenson
Manifesto

The architecture of the Hindu temple, as we know it today, has become a caricature of applied style and a theater for rituals rather than the symbolic representation of the core concepts of Hinduism. There is a disconnection between the beliefs and their translation into architecture, which has resulted in a dissolution and erosion of the temple as a vehicle for the ritual spiritual journey. The temple is built on a literal and conceptual framework of core essential elements such as the sanctum sanctorum, the roof, the plinth, its orientation on earth, and its function to, metaphorically, transport people from earth to the sky. Lost in this apparent evocation is the ability for the architecture to transmit and provide a permanent built monument to the universe and a conduit for the individual’s soul to realize moksha (ultimate enlightenment). This thesis proposes to design a possible new evolution of the Hindu temple through the identification, extraction, and redefinition of Hindu mythology, cosmology, ritual, architectural tectonics of the temple, and the vimana as a machine. The word vimana first refers to an ancient aircraft extensively documented in ancient Indian scriptures that pre-date Hindu temples, translated through history to mean mythological flying palace/chariot, and then phased into temple architectural vocabulary to mean the monumental roof structure over the sanctum. The injection of the vimana’s mechanistic origins back into the temple typology will result in what can be interpreted as a pre-historic future architecture.

The ambition for the architecture is to create a meaningful translation of the core essential elements of the Hindu temple and the prehistory of the vimana that will set the groundwork for the temporal continuity of its typology. This thesis may or may not operate as a prototypical framework of the Hindu temple where the essential elements are often combined to communicate its place on earth regardless of context or site.

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This image is of the ancient rukma vimana, as documented in the Rg Veda, rising to the sky as the temple vimana fades into a silhouette lodged in the ground.

Image Credit: Apoorva Rao
Vimana
In vedic history, the Indian perception of time represented as an infinite cycle, each cycle being divided into 4 periods or Yugas: Krta Yuga, Treta Yuga, Dwapara Yuga, and Kali Yuga. In Krta Yuga god was said to have walked amongst humans, in Treta yuga, the presence of god became scarce and desended to earth only when invoked by sacrifices and ritual, and in Dvapara, humans only had images of gods to worship and gods would come down in disguised forms. Kali Yuga, the era in which we live, is considered the dark age because it is devoid of the presence of god. Public Temples only appeared in this era because it is said that one can feel the presence of god in a correctly built temple with properly installed icons. The Vastu mandala became increasingly more important and the symbolism of a temple becomes fused into the architectural and sculptural elements. The vimanas, ancient aircrafts were documented, in the Rgveda and the vimanika shastra, to have existed in the yugas before the Kali yuga, during and before the Ramayana (Chronicles of a reincarnation of Vishnu). The vimana, roof structure of a temple, was said to be modeled after these ancient aircrafts.
The one prevailing definition of the vimana is that of transportation or the act of traversing from one place to another, physically or non-physically.

Classification of Vimanas

Vimana (n.) Sanskrit Origin
1. Aircraft, Ancient flying machine
2. A mythological chariot or flying palace of the ancient Hindu gods as described in the sanskrit epics
3. The monumental pyramidal roof over the sanctum sanctorum of the Hindu temple or a gopura (entry gate)
4. Traversing, measuring out

The vimana is an ancient aircraft described in detail in the Rg Veda and in the Vimanika Shastha that pre-date Hindu temples, translated through history to mean mythological flying palace/chariot, and then phased into temple architectural vocabulary to mean the monumental roof structure over the sanctum. My interest lies in its primary meaning defined in the Vedas and Vimanika Shastha (an ancient text/manual for flying vehicles) and its relationship of visual similarity to the vimana, roof structure of the temple. In both meanings it serves as a transportation device between earth and the sky. The aircraft vimana physically transports a being from earth to space while the roof vimana is a spiritual conduit connecting the human from earth to the sky. The temple vimana can then be understood as the translation of an ancient machine that has lost its mechanical quality overtime.

Dr. Enrico Baccarin and Dr. Kavya Vaddadi, Reverse Engineering Vedic Vimanas: New light on ancient Indian heritage, (Florence: 2018), Chapter 5 Vimanas Literature.
Vimana as Machine.

The aircraft vimana is a mechanistic marvel of advanced technology which used different forms of propulsion (antigravity, solar, wheels, aerodynamic wings etc…) and served a variety of functions (exploration, transportation, enjoyment, war etc…). The mechanistic origins of the vimana are essential to the history of the temple. This reclamation of mythological history will inject a new vitality and redefine the parts put forth by the new temple typology.

Jalayan
A vimana designed to operate in water and air (Rig Veda 6.58.3)

Kaara
A vimana that operate in ground and water (Rig Veda 9.14.1)

Tritala
A vimana consisting of three floors (Rig Veda 3.14.1)

Tri Chakra Ratha
A three wheeled vimana designed to operate in air (Rig Veda 4.36.1)

Vayu Ratha
A vimana powered by wind or gas (Rig Veda 5.41.6)

Vidyut Ratha
A vimana powered by solar energy (Rig Veda 3.14.1)

Different Vimanas documented in the Rg Veda*

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Vimana as Mythology

The vimana in ancient Indian mythology refers to a flying palace or chariot that took deities from the world of the humans to the world of devas (demi-gods), from country to country, and from the sky to the ground. There are many examples of vimanas in the sanskrit epics which service different royal families and deities to carry out their needs. The pushpaka vimana in the Ramayana is used by the demon king Ravana to abduct Rama’s wife, Sita, from India to Sri Lanka. “Flying Vimanas were cited at 41 places in Mahabharata. The asura king Salva had an aerial vehicle called Saubha Vimana with which he attacked Dwarka capital of Lord Krishna. He began to shower missiles and landed in the high seas.” Krishna also has his own vimana.

Vimana as Metaphor

The mythological vimana can be interpreted as a metaphor translated into a temple. Two examples of these translated metaphors are the Koranganatha temple in Tamil Nadu and Konark Sun Temple in Orissa.

Koranganatha Temple:

| Mythology | Koranganatha is the god Vishnu in the resting position on vasuki, his multi-headed snake vehicle. |
| Translation | Ranganatha sits on a plinth like the snake vehicle, surrounded by a moat of water which simulates the cosmic waters |
| Temple | The temple is a house for ranganatha which operates as a metaphoric space for the deity’s existence |

Konark Sun Temple:

| Mythology | Surya, Sun God, his chariot, charioteer, and 7 horses |
| Translation | The Chariot becoming enclosed compartments of the temple and the symbols becoming sculptures on the wall |
| Temple | Shows the hybrid form of a chariot and a temple with sculptures of Surya |

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The architectural vimana is a monumental piece of compressive stones that sits on top of the garbha grha (sanctum sanctorum). The vimana is made up of talas, or layers of stone. This roof structure has been depicted throughout history through different styles such as the Dravida, Vesara, and Nagara. Each vimana, however dissimilar in physical style, metaphorically represents the sacrificial fire (yagna), the divine tree growing into the sky and a cosmic pillar which acts as the conduit for souls to realize moksha.

**Vimana as Pyramid Roof.**

Temple as Vimana: S, M, L, XL

“Miniature architecture serves as the basic building block of full-scale buildings in the Deccan and in other parts of South Asia. Small versions of the temple appear on lintels, door jambs, basement moldings, on interior and exterior walls, on cornices, clerestories, entablatures, on superstructures, on almost any and every sculpted surface of the temple.”

The vimana is represented in the temple as the unit of form that manifests itself in multiple variations and scales. It is extra-large at the roof scale, large at the aedicule scale, medium at the scale of the dispensing seat, and small at the sculpture scale.

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9 Subhashini Kaligotla. “Shiva’s Waterfront Temples: Reimagining the Sacred Architecture of India’s Deccan Region.” (Columbia University:2015), 63-64.
Temple as Type.

The Hindu temple was perceived by ancient Indians as the confluence of three scales of the universe: the human, the temple, and the earth. The essential commonality in all these scales are the base, the core, and the axis, and the representation of all five natural elements: earth, water, fire, air, ether in the form of human chakras, syntax of temple architecture, and physically present in the earth. As mentioned previously, temples emerged in the Kali Yuga out of the need for physical spirituality which supplemented the meditation at home shrines. The temple's purpose and identity has gradually corroded over time. Temples were at first communal home shrines to individual village deities who, much like Greek mythology, were personified elements of nature. As civilizations expanded and societal structure became more complex, it became apparent that more complex higher powers needed to be represented. It was then that Brahma, Vishnu, and Shiva became popularly recognized as the forces that govern the cycles of life and the universe: creation, maintenance, and destruction. Temples, as a result, became more complex in their architectural syntax to accommodate larger crowds, community activities, performance art and music, and marriage.

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2 Kaligotla, “Shiva’s Waterfront Temples: Reimagining the Sacred Architecture of India’s Deccan Region”, 63-64.
Temple as Place

“The buildings' scenic locations on riverbanks, alongside artificial lakes and waterfalls, and atop sandstone bluffs offering panoramic vistas further enhance their visual appeal.”

Like many spiritual typologies, Hindu temples tend to be situated in places closest to the sky or in the middle of nature.

On Site:
The temple's proximity to a water source, be it ocean, sea, lake, river, tank, or well, is very important due to the prevalence of water-based rituals and access to basic hygiene. They are also built away from urban society or as a sanctuary from the pressure of daily life/urban life. Most of them are located on hills, in forests, on water, and in caves.

For a community:
A temple is a symbol of the universe from profane to sacred. A visual history of mythology and a reminder of identity and origin.

To individual:
An individual goes to a temple to feel a spiritual presence, to be surrounded by meditative images and calming thoughts. It is a quiet journey into an induced sleep state where at the end, the body and soul are cleansed on their way to achieve ultimate enlightenment.

Temple Rituals.

Daily rituals are performed by the priests in the temple to prepare for the day’s activities. These rituals inform the program required of the temple.

1. Clean the enclosure
2. Clean vessels used in rituals
3. Remove old flowers and put new ones, preferably fresh garden grown flowers
4. Collection of freshwater for the day, has to be sanctified by the priest and sprinkled over the flowers and fruits used for worship
5. Decorate murti(idol)
6. Trimming and lighting oil lamps
Sacred

Vastu Mandala (Cosmic Building Plan Diagram)

Volumes: Cosmic diagram "classically employed to denote the air that encompasses the light of the sun and the moon: the air, the atmosphere, the earth’s protective layer that establishes the health of existence. It is a circle because circles are perfect and comprehensive without a beginning or end."

Mandala: Cosmic diagram "classically employed to denote the air that encompasses the light of the sun and the moon: the air, the atmosphere, the earth’s protective layer that establishes the health of existence. It is a circle because circles are perfect and comprehensive without a beginning or end."

3 Dimensional Building Diagram

Site Ritual Axis Establishment

Garbha Grha (Womb House)

Sanctum Sanctorum

3 Walls and a Roof Installed

Vimana (Conduit to Ether)

Roof Structure

Marking N/S Axis with Stamba (Pole) and Dispensation Seat

Sculptures and Nature Mask the Sacred

Fig. 13: Temple Ritual Construction

The major commonality in the temple components are a result of the ritual construction process of the hindu temple which starts with the sacred cosmic diagram and ends with the temple being contained in the profane.
Program
It is common for religious and spiritual typologies to be defined by their programmatic parts, form and desired location. The Buddhist stupa has the outer gate with 4 toranas, an ambulatory around the anda (mound), a harmika, and a chatri. The standard components of a mosque are the minbar pointed towards mecca, the minbar, ablution fountains, a sahn, the portal, and the minaret. The Greek temple is iconic for its clearly defined set of parts. The cela sits on a plinth surrounded by massive columns with a roof structure that defines each layer of the roof.

The Hindu temple can be defined by its set of essential parts outlined sequentially through the ritual construction of the temple. First, there is a determination of the vertical axis and the horizontal East/West Axis so that the cosmic diagram of the universe (Vastu Mandala) can be placed. Then markers are placed on the vertical axis to signify the journey from the ground to the sky. At the bottom a kalasha (copper pot) is placed containing precious metals, then is the sanctum sanctorum or womb-chamber, followed by the roof structure (vimana) and the upper kalasha on the filial. The whole structure sits on a plinth and is required to be preceded by a dispensing seat to the east horizontal axis. The dispensing seat in a shrine is generally the first spiritual threshold and circumambulatory space. There would also be a space allocated around the sanctum sanctorum, either outside and/or inside the temple itself as a clockwise ambulatory pathway.

A temple’s purpose is “not so much to pray” as it is to feel a spiritual presence. It has been imbued with various programs over the millennia: shrine, community gathering place, “art gallery, economic institution, political power, social organization, crafts-guild, fortress, and refectory”. Rao states that the decay of the temple as a spiritual institution is a result of the disillusionment of the temple’s purpose as of its association with political and social power. He argues that the temple has become an office building filled with god fearing people who go out of obligation rather than

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Rao, *The Indian Temple*, 130.
Contemporary temple program

Refectory, Water Tank, Mandapa (Hall), Nata Mandapa (Dance Hall), Kalyana Mandapa (Marriage Hall), Giftshop, Book store, Offices, Priest Living Quarters, Community Center, Minor Shines, Gopura (Gates), Garbha Grha (Sanctum Sanctorum), Vimana (roof), Kalasha (ceremonial copper pot), Ambulatory spaces, murti (idol in manifest or unmanifest form), auditorium, classrooms, underground treasury and book archive, statues, dispensing seat, skamba (pole)

The ideal temple program

Garbha Grha (Sanctum Sanctorum), Vimana (roof), Kalasha (ceremonial copper pot), Ambulatory spaces, Nata Mandapa (Dance and Music Hall), Water Tank, dispensing seat

Materiality

Local granite, stone, metal, wood. The locally quarried red sandstone in which they are built comes alive at sunrise and sunset, showing off the temples’ fine figural sculpture and deeply faceted exteriors.

Considerations

Naturally reflective of sound (reverberation throughout the mandapa from the sanctum), dramatic natural lighting, smell of sandalwood and incense, feeling of entering a cave or dream, on or near a body of water for rituals and simulating the cosmic waters, sequence from profane to sacred

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Subhashini Kaligotla. “Shiva’s Waterfront Temples: Reimagining the Sacred Architecture of India’s Deccan Region.”
Kalasha x2

The kalasha is a copper pot that, for the purposes of the temple, contains the precious metals of earth. One is placed below the earth during the consecration of the temple and another is placed above the vimana when the temple is finished. They both mark the vertical z-axis, cosmic pillar.

Mandapa

A Mandapa is a hall and/or porch that precedes the garbha grha (sanctum) or other mandapas that connect it to the garbha grha(sanctum).

Vimana

The vimana is a hollow monumental pyramidal roof structure that sits right above the garbha grha.

Grabha Grha

Literally meaning “womb chamber”, the sanctum sanctorum of the temple is where the seed of god is placed (the idol's manifest or unmanifest form). This part of the temple is always square in plan.

Dispensing Seat

The dispensing seat is a pre-alter that is situated before the garbha grha (sanctum) on its E/W axis. It is usually circled in an ambulatory way and is used to perform rituals. The dispensing seat is usually shaped in the image of the vimana.

Ambulatory Space

The process of circumnambulation is very important in the hindu temple and as a result, there are generally spaces to circumnambulate around the temple, on the plinth around the temple, and around the sanctum or shrines.

Garden/Water Source

Temple rituals require for fresh flowers to be picked everyday as well as an adequate water source (well, tank, river, lake, ocean)
Fig. 6: Temple Ritual Construction

The major commonality in the temple components are a result of the ritual construction process of the Hindu temple which starts with the sacred cosmic diagram and ends with the temple being contained in the profane.
Site of Spiritual Typologies.

Hindu temples experience a similar treatment to Greek temples as being stand-alone structures on mountains, hills, water, in forests, and towns. Ancient temples were located in a place of peace and tranquility to escape the pressures of daily life. The journey to the temple was as important to the location of the temple itself.

Location of site should not be near crematorium, temple or near any public place and the site should be selected far from public place to avoid hindrance in day-to-day life.12

Cosmic landscapes:

“It was customary in the olden days to select a site for building a temple in close proximity to a natural and perennial source of water. It is usual to find in old temples a natural or artificial pond...”13

Hindu temples are generally stand-alone structures located in a place that induces contemplation and peace. If they are located in urban spaces then they are surrounded by trees as nature and sounds barriers

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Marin Headlands

Location: Marin Headlands, CA, USA 37°49'27.6"N 122°29'57.7"W
History of Marin Headlands

2000 BCE
Coast Miwok tribe artifacts are found to date back 4000 years in the Marin Headlands

0 CE

1579 CE
Coast Miwok tribes by a priest on a ship under the command of Sir Francis Drake

1776 CE
Spanish military, missionary, and civilian settlers began arriving in the San Francisco Bay Area

1780-1810 CE
Coast Miwok tribes are introduced to disease, forced labor, and religious and societal indoctrination had led to the demise of their way of life
Spanish and Mexican rancheros, later giving way to Portuguese dairy farmers

1890 CE
Marin Headlands began to see U.S. Army settlements

1907 CE
The army owned all of the Marin Headlands

1940 CE
WWII-era military fortifications are still intact today for guests to explore, including Battery Townsley in Fort Cronkhite

1947 – 1991 CE
Marin Headlands became a top-secret location for Cold War initiatives, including two NIKE missile sites and rumored CIA operatives

1960 CE
The U.S. government sold more than 2,000 acres of land in the Marin Headlands to a private developer who planned to build a city in these rolling hills just north of San Francisco. A small group of local citizens, incensed by the prospect of development and the process the developers had undertaken, pursued every vein they could to put a stop to Marincello -- and were ultimately successful.

1972 CE
Creation of the Golden Gate National Recreation Area, an effort supported by the Golden Gate Council of American Youth Hostels (now the Golden Gate Council of Hostelling International USA)

1978 CE
The National Park Service leased the old Fort Barry infirmary building to the fast-growing youth hostel organization, making it the second of six Golden Gate Council hostels on National or State Park land.

Fig. 16: Project Nike Missile Base Proximity to Site
Nike Missile Control Site F-87 from the 1940s is right next to the Marin Headlands site. The site is abandoned and seems to have a few secret entry ways.

Photo Credit: Google Map Images
Record: Temple Matrix and Case Studies
First Temples are Discovered c. 125 CE
Upes Shetapu,  Maharashtra, Karnataka c. 500 CE
Sandalagudi,  Mahakut, Karnataka c. 500 CE
Virupaksha Temple, Pattadakal, Karnataka c. 600 CE
Kailasa Temple,  Ellora, Maharashtra c. 600-1000 CE
Koranganatha Temple,  Srinivasanallur, Tamil Nadu, India c. 850-950 CE
Banatigudi, Mahakut, Karnataka c. 500 CE
Upper Sivalaya, Mahakut, Karnataka c. 500 CE
Shore Temple, Mahabalipuram, Tamil Nadu 700–728 CE
Kailasa Temple, Ellora, Maharashtra c. 600-1000 CE
Bhoja Temple, Mahakut, Greater Nanded, 728-754 CE
Kumara Karta Temple, Srinivasanallur,  Sambha, India c. 850-850 CE
Temple Timeline

- Chennakesvara Temple
  Belur, Karnataka
  c. 1100 CE

- Konark Sun Temple
  Konark, Odissa
  c. 1250 CE

- Brihadisvara Temple
  Thanjavur, Tamil Nadu
  c. 1010 CE

- Modhera Sun Temple
  Modhera, Gujarat
  c. 1026 CE

- The Stone Chariot
  Hampi, Karnataka
  1500 CE

- Chandramouleswara (Isvara) Temple
  Arasikere, Karnataka
  c. 1220 CE

- Draupadi Ratha
  Mahakut, Karnataka
  1300 CE
<table>
<thead>
<tr>
<th>Temple Matrix</th>
<th>Plan</th>
<th>Section</th>
<th>Common</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Stone Chariot</td>
<td>Hampi, Karnataka</td>
<td>1500 CE</td>
<td>Garuda Mahadevi/Parvati NA/ Shiva Linga Resting form of Lord Vishnu Shiva Shiva Surya</td>
</tr>
<tr>
<td>Banatigudi Mahakut, Karnataka</td>
<td>c. 500 CE</td>
<td>Upper Sivalaya Mahakut, Karnataka</td>
<td>c. 500 CE</td>
</tr>
<tr>
<td>Ishvara Temple Arsikere, Karnataka</td>
<td>c. 1220 CE</td>
<td>Draupadi Ratha Mahakut, Karnataka</td>
<td>1300 CE</td>
</tr>
<tr>
<td>Koranganatha Temple Srinivasanallur, Tamil Nadu, India</td>
<td>c. 850-950 CE</td>
<td>Modhera Sun Temple Modhera, Gujarat</td>
<td>c. 1026 CE</td>
</tr>
<tr>
<td>Shore Temple Mahabalipuram, Tamil Nadu</td>
<td>700–728 CE</td>
<td>Granite Stones Granite Khandolite and Black granite Red Sandstone Soapstone (also known as steatite or soaprock) Slabs of Granite</td>
<td>Carved-Subtractive Compression Compression Compression Compression Compression Compression Disassembly</td>
</tr>
<tr>
<td>Virupaksha Temple Pattadakal, Karnataka</td>
<td>c. 600 CE</td>
<td>Kailasa Temple Ellora, Maharashtra</td>
<td>c. 600-1000 CE</td>
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<td>c.1010 CE</td>
<td></td>
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</tr>
</tbody>
</table>
Although the major commonality among all temples are the ritual construction, the plinth, the garba grha, and the vimana, the dissimilarities happen with the addition of program and the expansion of the temple’s architectural syntax.

Fig. 17: Dissimilarities
Fig. 18: Cape Canaveral Air Force Station Launch Complex 34
Analysis of the now-abandoned complex 34 site in Cape Canaveral and its layout similarity to hindu temple complex

Fig. 20: Complex 34, Rocket launcher
Diagram of the rocket launcher and its parts. Like the vimana, the rocket has much the same anatomy: A foundation support(plinth), A chamber holding an important item(sanctum), and a pyramidal upper structure(vimana) which functions to transport the rover to space.
Fig. 21: Maison De Verre, Paris, Pierre Chareau + Bernard Bijvoet, 1932
Diagrams indicating the location, form and structure of the Maison de Verre.

Fig. 22: Maison De Verre, Paris, Pierre Chareau + Bernard Bijvoet, 1932
Diagrams of the individual mechanical innovations that added both function and character to the house.
Glossary of Terms:

**Vimana** (n.) - Sanskrit
1. A mythological chariot or flying palace of the ancient hindu gods as described in the sanskrit epics
2. The monumental pyramidal roof over the sanctum sanctorum of the hindu temple or a gopura (entry gate)
3. Aircraft or mythological rocketship
4. “Apart” or “having measured”
5. An area of land measured out and set apart to be used for sacred purposes

**Garbha Griha** (n.) - Sanskrit
1. The sanctum sanctorum of the temple where the idol deity is kept and venerated
2. The ‘womb’ of the shrine

**Temple** (n.) - a place of meditation and serenity

**Profane** (n.) - The organic, worldly, ornate, desires, possessions, wealth, status

**Sacred** (n.) - The space created as an embodiment of ultimate enlightenment and release of all worldly desires and possessions

**Mechanism** (n.) - The dynamic parts of a machine

**Kali Yuga** (n.) - The Fourth period in the yuga cycle consisting of 432,000 Human years. Temples were created because god’s presence disappeared and had to be remembered in some way
Annotated Bibliography.


