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RESEARCH ARTICLE

KONARK SUN TEMPLE – THE CHRONOLOGY OF BUILDING, BREAK-UP AND REDISCOVERY

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Abstract

During 10th to 14th century, many grand temples were built in southern India, which still survive after 1000 years. Many of them have inscriptional evidence on who built it. Some Chola temples like Thanjavur Big Temple has great details on the grants given. However, there is a rare case of chronological documentation of how a temple was built and the challenges and methods. Baya Cakada is one-of-a-kind evidence on documentation of temple building covering the 12-year period of construction of Padmakasara Deula – the sun temple at Konark. This paper analyses the content along with other corroborative evidence, which helped resolve many of the mysteries around this temple and concludes how the temple vimana [Deula] ultimately crumbled.

Keywords: Kalinga Temple Architecture, Konark, Sun Temple, Baya Cakada, Eastern Ganga Dynasty, Narasimha Deva – I, Deula, Jagmohana, Nata Mandira, Bhoga Mandira, Tamil Heritage Trust, Babu4Heritage

Introduction

In India, temples existed from the puranic times and lot of vedanta period literature talks about temples and idol worship. But puranas also talk about temples being created and worshipped by devas and others in this and previous yugas which goes beyond 1000 BCE. At present scholars date the earliest known period of the temple based on four dimensions

- a. **Inscriptions:** Date of a Clear inscriptions which mentions the temple or its construction. This is a primary source.
- b. **Literary Sources:** period of literature which mentions a particular temple - (e-g) Sangam literature mentions Tiruchendur.
- c. **Puranic Source:** For people who believe in puranas, the puranic history of the temple,

being created and worshipped in various yugas is the date of the temple.

- d. **Arr & Architecture Sources:** Based on the style and objects in the various buildings, experts arrive at the age of the temple belonging to a certain era / dynasty.

Of these four, the inscriptional evidence is the primary source and the other three are used to validate or negate the primary evidence.

Documentation of Temple building

In many temple, we come across inscriptions relating to grants for temples, renovation and other activities. From this we indirectly infer the earliest date of a temple. Some chola temples like Thanjavur big temple has great details on who sponsored the temple, the grants given to the temple, names of the stathis and the people employed. However chronological documentation of how a temple was built and the challenges and methods used are very rare to find. In this paper, we are going to analyze one such instance of documentation of a grand temple.

Padmakshara Deula – the Sun temple at Konark

Konarka - Named after Arka (Sun) of Kona (Corner) (A.k.a. Padmakshetra and Bhaskara-tirtha). **Brahma Purana** (26.39-40) highlights Utkala (Odisha) with 4 great religious centres – Ekarma (Shiva), Puri (Vishnu), Viraja(Jajpur- Devi) and **Konaditya (Konark- Surya)**. **Vishnu Puranas** also credits Odisha with 4 Kshetras after 4 weapons of Vishnu - Bhubaneswar (Chakra), Puri (Shankha), Viraja (Jajpur- Gatha) and **Konaraka (Padma)**. The Original Sun temple was said to be built by Samba s/o Krishna by Magas from Sakadvipa based on Reference in Samba, Bhavishya, Varaha & Skanda Puranas.

The earlier small sun temple built during 7-8th centuries is replaced by a grand monument, over a period of 12 years from 1247-1258 by the Eastern Ganga dynasty king Narasimha Deva – I. This is the culmination of kalinga temple architecture with all 4 buildings complete in grand style - Deula [sanctum and vimana], Jagmohana [audience hall], Nata mandira [dance hall] and Bhoga mandira [offerings hall and kitchen] . Its vimana is projected to be the

tallest at that time at 240 ft. It is declared as the UNESCO world heritage monument in 1984, the only one in the temple state of Odisha – the land of temples.

But what remains now is only the Jagmohana with its four grand entrances closed and filled with sand, Nata mandira without roof and Bhoga mandira with only basement. The sanctum is damaged with no idol and the entire superstructure is collapsed. But what remains itself is a grandiose sight in the form of a great chariot with 12 wheels drawn by 7 horses housing the Jagmohana, Deula and the Nisha projection temples on 3 sides for 3 aspects of Surya.

Chronology of Rediscovery of Konark

This paper explores how a grand temple was put to disuse and become dilapidated and how it is rediscovered and reinstated to the current state, with the help of available documents and reference books.

- ❖ **1580 CE - Last Documented Eyewitness** of the Full Konark Temple - Abul Fazal wrote in 'Ain-i-Akbari' "Near Jagannath is a temple dedicated to the sun. Even those whose judgment is critical and who are difficult to please, stand astonished at its sight,"
- ❖ **1580 – 1758 - Next ~200 years – no news** of the Grand Temple. It seems to have vanished.
- ❖ **1759 - First visit to the temple ruins by outsider** (Matala Panji – Nathi 34 of Visa Kisora Maharaja (AD 1737-1793). Personal account of Baba Brahmachari – Guru of Sheo Bhatta Sath, bhonslas ruling Odisha then talks about the temple among mounds of sand, creepers. heavy damage to north and east sides, - Salvages Ratha simhasana image with hands broken (location unknown), Also Aruna Sthamba (at Puri simahadwara now) , Image of raja Narasimha deva – I (at Mukhasala of Lakshmi temple) , Navagraha stone from southern portal (now in Gundica temple)
- ❖ **1795 AD –Second Visit** (Matala Panji – Nathi 41 of Raja Divya Simha (AD 1793-1798) Dewan Bhamara Pattanayaka Brahmachari – Tried for 3 months to unearth the temple in vain and brought the Bhabhaji image , Sakthi image to puri. After this Raja Divya Simha was captured by British and

the activities stopped. But now Britishers are interested in it and visit the location frequently.

- ❖ **1809 – Drawing of East view** - with camp in front and rest covered in mounds of sand
- ❖ **1824 – Stirling – View from North** - only small section of Vimana (~120 ft) still standing looking like a sail ship from a distance (Asiatic Research XV)
- ❖ **1838 – Fergusson paintings** - The projecting side walls still standing , Navagraha Lintel still intact, Pillars standing in Mukhasala already collapsed (Picturesque Illustrations of the Architecture of Hindustan (Plate 7 a)
- ❖ **CE 1848 Deul collapses** -Remaining SW portion of the temple crumbles in strong gales.
- ❖ **CE 1900 Lt Gov John Woodburn visit** – Elephants, Horses and Gajasimha reset in pedestals, raised platform along with 7 Horses and Wheels excavated.
- ❖ **CE 1901 Lt Governor Sir John Woodburn** - closes the four gates of the Jagmohana. The interior was filled with sand over 3 years.
- ❖ **CE 1909 Traces of Mayadevi temple** found.
- ❖ **CE 1915 Sculpture shed to house the Navagrahas** and other carved pieces.
- ❖ **CE 1939** Cleaning of sand Reveals **Kitchen block, south gateway and Vaishnava temple.**
- ❖ **CE 1984 UNESCO World Heritage Site status**
- ❖ **CE 2015 CBRI evaluation** for removal of sand inside Jagmohana

Unanswered questions regarding the construction:

This discovery has led to a lot of open questions and mysteries surrounding the temple.

- ? What drove the King to initiate this ambitious project to build the **biggest temple**?
- ? Why was it built in a **remote place** like Konark instead of Bidnasi (Cuttack), the capital?
- ? **How many years** did it take to start the planning and complete the temple?
- ? Where did he find the **brilliant artisans** to craft this??
- ? Was it achieved **by slave labour** or forced enlistment or **guild of temple builders**?
- ? Was there a **seaport** to transport materials as there was no river near Konark?

- ? How were the enormous **stone blocks** sourced to this **sandy desert beach**??
- ? How the iron were **beams** cast? Why were they added to the stone structure?
- ? How were the heavy stone blocks and iron beams **lifted to such heights** and set up?
- ? **Was the temple completed** and was in worship or abandoned before consecration?

How did it collapse? Is it due to its enormous size / faulty construction / sinking of Foundation / natural disaster / dereliction / warfare and human vandalism?

Documents which help in resolving this mysteries

Based on the following historical documents summed up by various research books, we can unravel many of the mysteries surrounding Konark.

01. Baya Cakada (Project Book) - Chronicle of Building Operations and Books of accounts written in Karani Script in Old Oriya with 73 palm leaves, spread over 12 years of construction (1241-1258) Anka 7-1.

02. Padmakesara Deula (Architectural Survey) - CE 1610 – Raja Purushotama Deva of Khurda Dynasty (1607-1621) commission a Survey report with detailed description and drawings of Lingaraja, Jagannatha and Padmakesara Temples. This is in Karani Script in Old Oriya with 23 palm leaves.

03. Madala Panji (Puri Temple Journal) - Chronicle of Puri Jagannatha temple started with Anandavarma Chodagangadev. Destroyed during Sultan Sulieman Karrani(Kalapahad) and said to be reassembled and rewritten in 16th CE with potential legends and facts.

04. Padmakesa Deula Karmangi (Ritual Manual) - Rituals established in Main sun temple. Written in Karani Script in Old Oriya

05 Trikala Mahamaya Arcana Vidhi (Ritual manual) - Religious significance of Mahagayatri temple. Written in Oriya script in Sanskrit language in palm leaves.

06 Silpasarani (Odishan architectural treatise) - **This** explains the theoretical technical aspects Odishan

Architecture. The plan for Mahaprasasta type of temple and mukhasala exactly matches the Konark temple as it exists now and the plan is 1 ½ times Lingaraja temple.

07 New light on Sun Temple of Konark (Research book) – authored by Alice Boner, Sadasiva Rath Sarma, Rajendra Prasad Das, this was published in 1972 covering content of above referenced books. It tallies with many of the later period observations and shilpasastras measures. Partially accepted by later day

book authors like Konark – black pagoda – K.S. Behra -2005; Sun temple of Konark – anil Dey -2015.

Built by a dedicated guild of temple builders:

From this we can visualize a dedicated team of temple builders focusing on a spiritual aspect to complete the temple on time.

| Name | Designation | Role |
|-------------------------------------|---------------------|-----------------------|
| Narasimha Deva | Mahasrama | King and mentor |
| Sadasiva Samantaraya Mahapatra | Sutradhara | Chief Architect |
| Gadadhara Mahapatra | Karmakara | Executive Architect |
| Gadadhara Mahapatra | Paricha | Supdt of Works |
| Vidyadhara Mhara | Murthikara | Chief of Image Makers |
| Aintha Maharana | Swansya | Head of Stone Masons |
| Rajiva Maharana | | Scaffoldings |
| Bindeu Maharana | Cunura | Plastering |
| Puria Mahapatria | Kamarakantra | Iron Casting |
| Dalabehera of Rpasagada | | Camp Admin |
| Haricandana Bhramrabara | | Accounts, Treasury |
| Sitadevi Thakurani | Pattamahadevi | Sitadevi Thakurani |
| Sandhivighraha Visvanatha Mahapatra | Raja Guru | |
| Bhuvaneshvara Mahapatria | Raja Guru | |
| Isana Bhatta Bhogika | Priest | |

This also talks about various artisans who worked in this. Some of them are Baitharu (gold smith), Cunura (plasterer), Jalikara (fretwork carver), Kamarakanta (iron caster), Kansari (brass and bronze caster), Katali Nayaka (head of stone quarry), Patthara cinhara (stone carving specialist), Pathara Kataria (stone quarrier), Pathara risalya (stone stacker in right sequence), swansya Pathuria (junior sculptor who cuts stones to sizes), Pathuria (stone sculptor to the architectural shape).

Chronology of Construction

The Baya Cakada project book details the project over a period of 12 years starting from pooja to the key stakeholders and ends with the submission of final accountsHere Anka represents Odisha representation of the regnal year.

- ❖ **Project Kick-off :** Mangalorpana Ceremony (Leaf I Anka 5)
- ❖ **In-sourced Team:** Presents Arrive from Mahasrama's Father-in-law Pandya raja from Madurai along with Silpis. They are gifted with fine rice and sammanam (Leaf X, Anka 9)
- ❖ **Defect Escalations:** Sutradhara refuses to accept work of Madurai Silpis and they go on hunger strike. On escalation Raja instructs them to work only on decorative work.
- ❖ **Framework Setup :** Beginning of Iron casting (Leaf XI, 7 Anka 9)
- ❖ **Prototype Construction:** Parshva devatas setup in Nisa temples (Leaf XV , Anka 12)
- ❖ **Client Visit:** Magha Sukla Paksham– Mahasrama came for Inspection and work stopped for 5 days to prepare.
- ❖ **Major Milestone:** Big Lion set on the Sikhara and wall above it closed.
- ❖ **Delivery Failure:** Large Maguni stone in a boat failed to arrive. Pilot fined (L XXII 20 Anka 12)
- ❖ **Project Funding :** War booty gold coins arrive from Bengal war (L xxxv, 9 1255AD)
- ❖ **Deadline Fixed:** Mahasrama dictates that by 10th day of 10th month of 10th year roof of temple to be done.
- ❖ **Integration Issues:** Kalasa could not be fixed. Sutradhara in despair. Chief supdt of Puri and Kasi Rajaguru visit

- ❖ **GO LIVE ON TARGET :** 11th day of Maha Shukla Paksa Saptami (feb) First Pooja begins on target of Sun Birthday (LLXIV 2 Anka 18 1258 AD)
- ❖ **Project Documentation:** Vidyadhara Pattanayaka completes accounts, makes three copies and hands over.

The Decline and Falling Apart of the Deula

Active worship was done for a long time after consecration till 15th CE which is evident from the detailed rituals mentioned in Padmakesa Deula Karmangi. This fact is endorsed in 1570 CE – Abul Fazal mentions in Ain-i-abkari that the temple is undamaged and still under worship.

During CE 1570+ –Kalapahad Raid - the lotus emblem with rubies atop the temple was removed to Purushottama temple. In fury Kalapahad beheads his deputy Bairam Khan and hacks off hands of the Adityas on Nisa temples (wrong mention as 1568 in Madala Panji #7 of Mukunda deva (1551-1568)

Due to loss of patronage and Non maintenance of temple - with upper half of Vimana exposed to severe storms and rains would have loosened the wall mason work which pressed down on the tenon of the Huge Gajasimha protruding on the eastern side which fell down in CE 1629 – towards east along with the wall damaging hands of puja image. Orders given to shift 2 Vijaya Pratimas (Urchava murtis) to Purushottama (still on Magha sukla Saptami – Konark Ratha yatra happens there)

With no puja and patronage, and Gradual Dereliction - Colophon of Paramakesara Deula Karmangi mentions that “for 12 years the sevaks did not do their duty (bhoga karmangi) properly. Thus, the Sun God gradually left this temple.

Biological analysis of moss layers collected from the Rocks in 1929, scientist have estimated the abandonment and start of moss formation to be around 1573 which largely tallies with the documentary evidence in palm leaves when pujas stopped.

This needs to be compared with the nearby large temples like Puri Jagannath, Lingaraja, and other temples in Bhubaneswar which were also severely attacked and damaged by Muslim invaders repeatedly. However, these temple deities were quickly replaced. Temple partly renovated and continued with pooja and whitewash and other maintenance. They still stand testimony to the resilience of the Odisha people. However, in the case of Konark, after the initial loss of main idol and some images, the pooja seems to be abandoned with subsequent lack of support from kings and mathas. This could have the major contribution to the disintegration of the temple primarily bonded with mortar and other heavy overhand elements exposed to coastal furies.

Conclusion

Baya Cakada is one of the kind of documentation of building of a grand temple as a project. It has answered many of the mysteries surrounding the temple in support with other evidence. Interestingly its chronology does not differ from modern day CMM level 5 – ISO IT projects.

It gives great insight into how the Konark sun temple construction was organized, its challenges, methods and innovations. It clearly documents that it was not built by a slave army but a dedicated guild of temple builders. It was constructed using various chlorite and sandstones sourced from mountains thru an extinct Candrabhaga river. The large size block

constructions were bonded using mortar and metal alloys as well as buttressed with iron beams, but no magnetic properties were used. It clearly documents that the temple was complete on time and in worship for several centuries. It is also evident from documentation and moss research that due to Muslim invasions in 16th CE, the primary deities and key religious icons were damaged and surprisingly pooja and patronage was stopped instead of repairing it like other nearby temples of Jagannath and Lingaraja etc ..

This has led to gradual loosening of mortar holding the heavy overhanging Gajasingha which destroyed the Deula during its fall. Thus, the tallest temple of medieval India crumbled to a heap due to disrepair and lack of patronage.

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