

The Udayarpalayam School of Stucco Art: A Study of a Unique Palayakarargal Architecture

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Abstract: This study presents a focused analysis of the stucco artwork of the Udayarpalayam Aranmanai, arguing for its recognition as a distinct and significant school of thought within the broader artistic traditions of the Nayaka period in Tamil Nadu. While Nayaka-era art is renowned for its monumental temple architecture and vibrant frescoes, the secular stucco work at Udayarpalayam represents an unexplored and highly localized craft tradition. Based on a primary analysis of surviving artworks on the façade walls of the palace courtyard and within the Natagasalai (Royal Entertainment Hall), this research deconstructs the unique material composition and construction techniques that define the Udayarpalayam school. The artisans' innovative use of indigenous materials and three-dimensional figures stands in stark contrast to the surface-oriented stucco work of their contemporaries. By examining the iconography of these figures, particularly the profusion of dancers and celestial beings, this study connects the art to the function of its architectural context and establishes the Udayarpalayam style as a vital, yet critically endangered, testament to the artistic patronage of the Palayakarargals.

Key words: Craft tradition, Palayakarargal Architecture, Indigenous materials, Udayarpalayam stucco, Vernacular art.

INTRODUCTION

The Udayarpalayam Aranmanai (palace) in the Ariyalur district of Tamil Nadu stands as the most significant surviving testament to the power and cultural identity of the Udayarpalayam Palayakarargals, a regional dynasty that skilfully navigated the political landscape of South India from the 18th century onwards. While the palace's syncretic architecture is of great historical importance, its true artistic distinction lies in a unique and highly developed school of stucco ornamentation. The study of Nayaka-period art (c. 16th-18th centuries) has traditionally focused on the grand gopurams of temples, covered in brightly painted stucco statues, and celebrated mural traditions. The most famous example of Nayaka civic architecture, the Thirumalai Nayakkar Mahal in Madurai (c. 1636), is renowned for its impressive stucco work on domes and arches, using a plaster technique known as chunam to achieve a smooth and glossy surface finish. However, secular art within palaces, particularly the specialized craft of stucco sculptures, remains a less-explored field. The artwork at Udayarpalayam represents a distinct "school of thought," characterized by an innovative construction method and sophisticated understanding of local materials, resulting in artworks of remarkable dynamism and form. This study addresses a significant gap in Nayaka-period art scholarship by focusing specifically on this unexplored craft tradition. The Udayarpalayam School of Stucco Art, flourishing under the Palayakarargal, represents a distinctive architectural idiom characterized by intricate sculptural embellishments and specialized construction methodologies (Shabnum & Sharmila, 2024). This architectural style showcases the innovative application of stucco; a material historically favored for its aesthetic versatility and structural adaptability in traditional Indian building practices (Paul et al. 2024). The intricate detailing observed in these structures often employed lime-based mortars, frequently augmented with organic and inorganic additives to enhance durability and workability, a practice commonly used in ancient Indian constructions (Santhanam et al., 2020). For instance, analyses of Chettinadu houses have revealed the meticulous incorporation of materials such as limestone, seashell lime, and various plant- and animal-based organic additives into their mortar compositions, demonstrating a sophisticated understanding of material science (Santhanam et al., 2020). Such enhancements often include the use of natural admixtures such as Kadukkai, Jaggery, Aloe vera, Neelamari, and Hibiscus, which contribute to the superior mechanical properties and longevity of the stucco (Shivakumar et al., 2021). The integration of these organic components, detailed in ancient palm-leaf manuscripts, underscores profound empirical knowledge of material science that predates modern chemical understanding (Shivakumar et al., 2021). These traditional techniques ensure the formation of robust calcite structures, often accompanied by acicular aragonite crystals, significantly improving the overall resilience and aesthetic quality of the stucco (Shivakumar et al., 2021).

This study aims to conduct a systematic analysis of the stucco work at the Udayarpalayam Aranmanai to establish its significance as a distinct school of art. This will be achieved by deconstructing the unique material composition and construction techniques used by the Udayarpalayam artisans. Conducting a detailed iconographic analysis of the surviving stucco friezes, particularly the narrative panels of the Natagasalai. This study argues for the recognition and preservation of this craft as a vital part of Tamil Nadu's regional artistic heritage.

LITERATURE

The interpretation of figures and motifs within stucco friezes, such as those depicting Krishna Leela and specific dancer poses, involves analysis both narrative content and the symbolic elements used within the artwork. The central narrative theme of Krishna Leela often incorporates dynamic dancer poses, which communicate the sacred stories of Krishna's life and adventures. These poses are essential for understanding the aesthetic and devotional impact of the friezes (Cardell-Fernández and Navarrete-Aguilera, 2006).

In addition to human figures, the friezes frequently feature flora and fauna like the yali, peacock, monkey, parrot, and dove, which serve multiple roles within the narrative. These animals are not merely ornamental; they hold significant cultural and spiritual meanings that support the overarching themes and symbolism of the artwork. The yali, for example, is a mythical creature that symbolizes power and protection, while the peacock is often associated with beauty and divinity, frequently linked to Krishna himself (Cardell-Fernández and Navarrete-Aguilera, 2006; Liu et al., 2024).

In terms of technical and iconographic findings, these friezes are not isolated works of art but are integral to the function of architectural spaces like the Natagasalai or the dance hall. These spaces were designed to enhance the ritual and cultural activities of the period. The architectural integration of stucco work and narrative images creates an immersive environment that enhances both the aesthetic presence and the cultural narrative being told (Liu et al., 2024; Fang et al., 2024).

When comparing these stucco traditions to contemporaneous forms, such as those seen in the Thirumalai Nayakkar Mahal, the variations in design approaches become evident. The narrative techniques, choice of imagery, and functional integration reflect differing regional styles and aesthetic priorities. Thirumalai Nayakkar Mahal, for example, is known for its grandiose architectural style and elaborate stucco embellishments, marking regional differences in artistic expression (Fang et al., 2024).

Overall, the interpretation of stucco friezes, with their intricate narrative motifs and diverse iconography, provides profound insights into both the artistic techniques and cultural values of the time, serving as a bridge between the physical architectural space and the intangible cultural heritage it represents.



Figure 1 7D methodology flow chart

METHODS

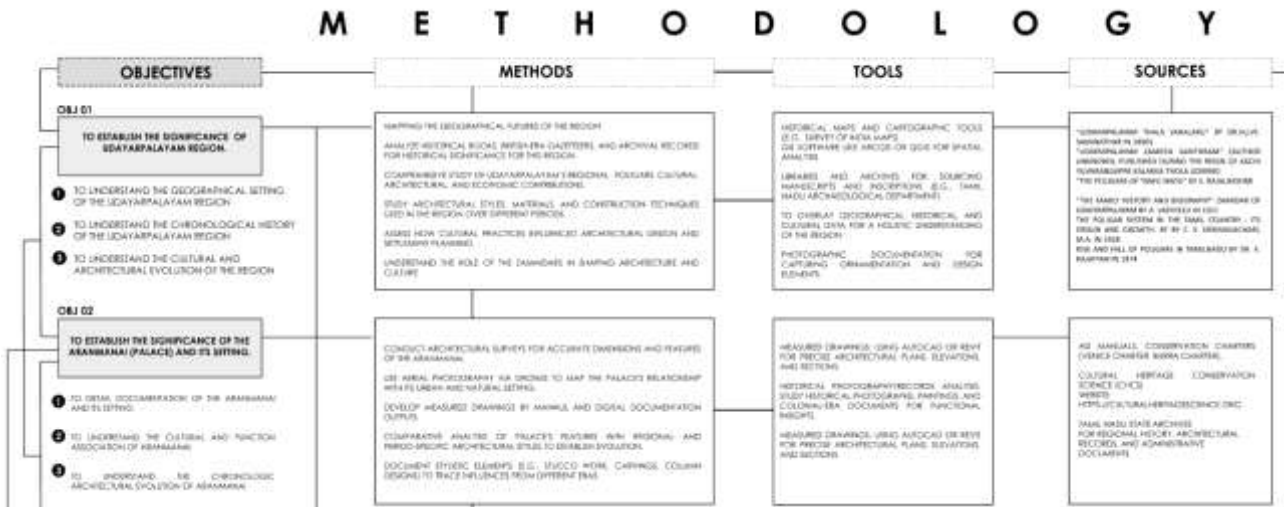


Figure 2 Research methodology framework for this study

This study is a qualitative analysis based on primary, in-site observations of the surviving stucco artworks at the Udayarpalayam Aranmanai. The primary data sources include the architectural façades of the main courtyard and the interior walls of the Natagasalai (Krishna Vilasam). The analysis is supplemented by historical inscriptions found within the Aranmanai and the contextual historical records of the Nayaka and Palayakarargal periods. Information Sources: Primary data were collected through direct visual analysis of the architectural site, including photographic documentation of the stucco figures, their placement, and their current state of preservation. The provided image of the Natagasalai facade, showing its multi-tiered structure with intricate stucco friezes and arched windows, serves as a key reference for this analysis. Secondary sources include historical gazetteers and scholarly articles on Nayaka-period art and architecture to provide a historical and artistic context.

Data Collection Process & Data Items

The data collection process involved a three-part analytical framework, Technical Analysis, Examination of both intact and damaged stucco figures to identify the materials and layering techniques. The key data items included the type of wood used for the armatures, composition of the plaster, and method of application. Iconographic Analysis, Identification and interpretation of figures and motifs within the stucco friezes. The data items included the central narrative theme (Krishna Leela), specific dancer poses, and the identification of flora and fauna (e.g., yali, peacock, monkey, parrot, dove) used as narrative devices. Contextual

Analysis, Relating the technical and iconographic findings to the function of the architectural space (Natagasalai) and comparing them to contemporaneous stucco traditions, such as that of the Thirumalai Nayakkar Mahal, India.

RESULTS AND ANALYSIS

The Udayarpalayam Technique

The distinctiveness of the Udayarpalayam stucco school lies in its ingenious, multi-layered construction technique, which masterfully combined locally sourced materials. This method, analyzed from the primary observation of both intact and partially decayed figures within the Aranmanai, reveals a stepwise process that is both structurally sound and artistically expressive. The artisans of Udayarpalayam, Karungali, Suduman, and Sunnab, drew from a palette of traditional Tamil building materials, adapting them for their unique artistic purposes. The foundation of the artwork is the palace wall itself, constructed from *Suduman* (burnt brick), a material used in the region for thousands of years. On this stable brick canvas, the artists built their sculptures using a combination of wood and lime plaster. The most significant material choice was the use of *Karungali* (Indian ebony, *Diospyros ebenum*) for the core armature of the figures. Karungali is a dense, durable hardwood that is highly resistant to insects and rot, making it an excellent structural choice. Beyond its physical properties, Karungali is considered a sacred wood in Tamil culture, believed to possess divine energy and protective qualities, and is often used in constructing temples and religious icons. The selection of this spiritually potent wood for the skeleton of the stucco figures suggests a deliberate effort to imbue the artwork with both a sacred and an aesthetic dimension. The final sculpting medium was *Sunnab*, a traditional, lime-based plaster. At Udayarpalayam, a paste of lime and sand sourced from local riverbanks was prepared. This coarse and durable mixture was ideal for hand-sculpting intricate final details of the figures.

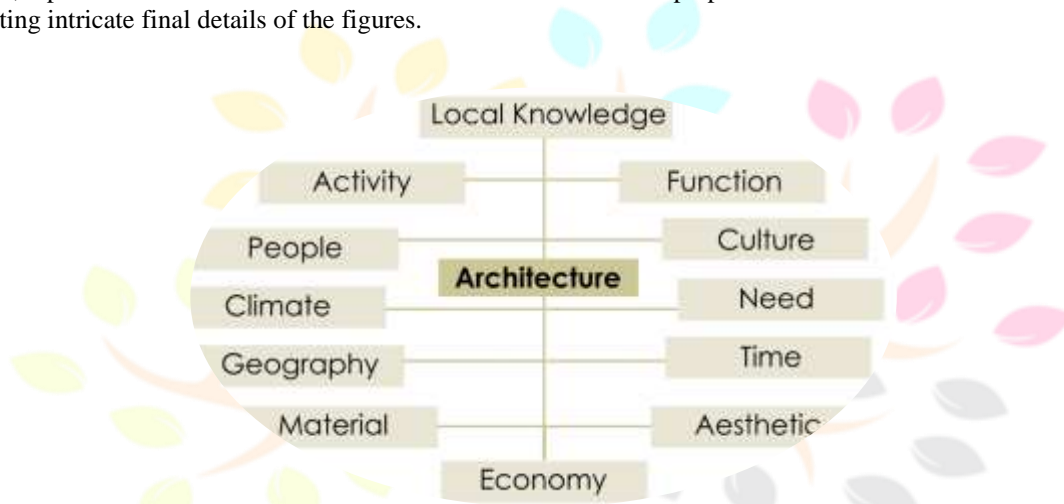
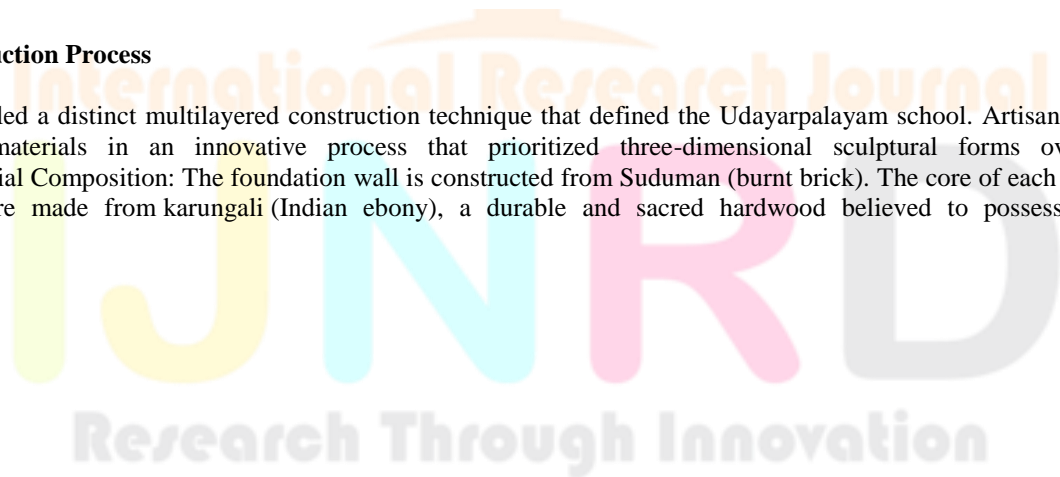


Figure 3 conceptual drawing of architecture and its influencing parameter

A Unique Construction Process

The analysis revealed a distinct multilayered construction technique that defined the Udayarpalayam school. Artisans combined locally sourced materials in an innovative process that prioritized three-dimensional sculptural forms over surface decoration. **Material Composition:** The foundation wall is constructed from *Suduman* (burnt brick). The core of each sculpture is a wooden armature made from *karungali* (Indian ebony), a durable and sacred hardwood believed to possess protective



qualities. The final sculpting medium is Sunnab, a coarse lime and sand plaster sourced from local riverbanks. Armature Method: Primary observations of damaged figures reveal a unique construction process. A skeletal frame of Karungali wood was created to define the pose of the figure. The armature was wrapped in cloth to create a textured surface for the plaster to adhere to. The sunnab paste was applied over the cloth and hand-sculpted while wet to create the final detailed structure. This method allowed for the creation of dynamic, projecting figures in complex poses, a significant technical departure from the polished chunam plasterwork seen in other Nayaka palaces. The Udayarpalayam technique for creating stucco figures is a sophisticated multistage process that distinguishes it from other regional styles. Primary analysis of damaged figures, where the underlying structure is exposed, reveals the following steps: First, a Wooden Armature, a skeletal frame for the figure, was fashioned from Karungali wood. This armature defines the basic pose and proportions of the sculpture, providing a strong internal support system. The wooden skeleton was then tightly wrapped with cloth. This layer served a crucial function, providing a textured and absorbent surface to which the wet lime plaster could firmly adhere, preventing cracking and ensuring a strong bond between wood and plaster. plaster application and sculpting Finally, the *sunnab* paste, a mixture of lime and sand, was applied over the cloth-wrapped armature. While the plaster was still wet, artisans' skilfully hand-sculpted the final form, shaping intricate details of anatomy, drapery, and ornamentation. This armature-based method allowed artists to create figures that were not merely high-relief carvings but were essentially sculptures in the round, attached to the wall. It enabled a level of dynamism with figures in complex dance poses, limbs extended, and bodies turning in space, which would have been impossible to achieve with a simple plaster-on-brick technique.

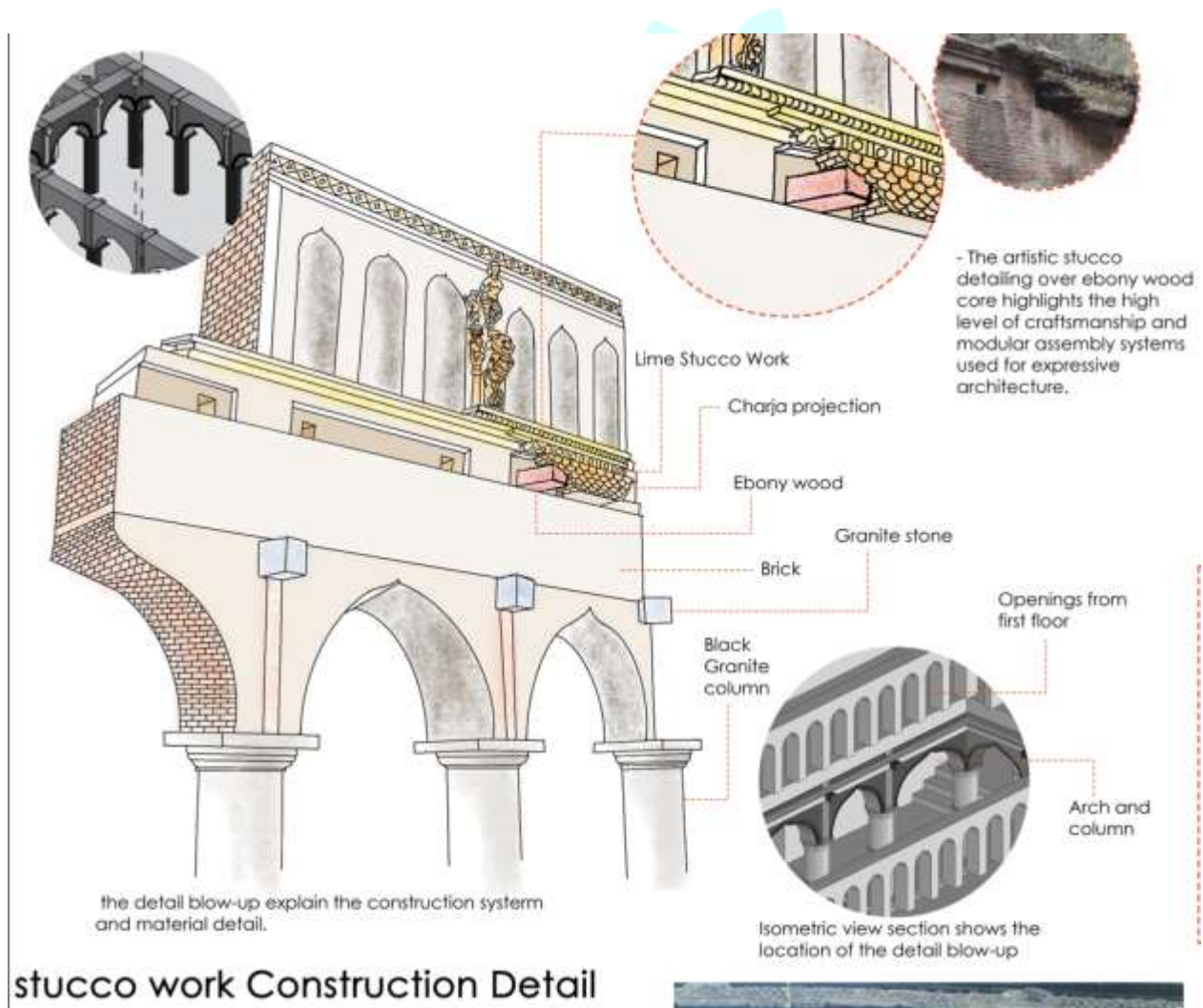
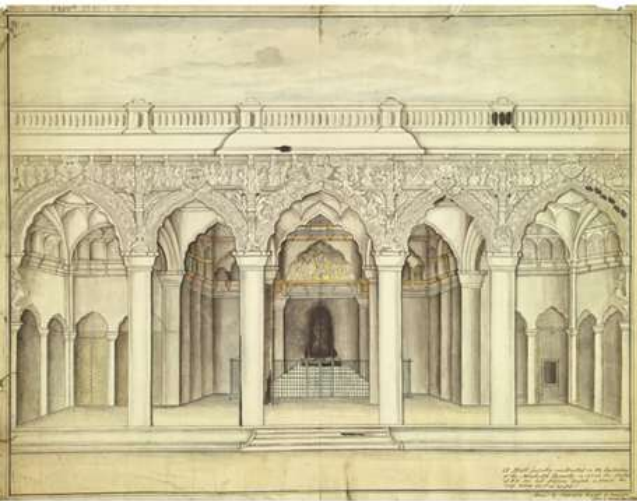


Figure 4 stucco work construction system with blow up details



Verandah depth, courtyard-centered plans, and scale of entrances suggest regional typological influence. Every architectural element shown around derives influence by regional, political, and chronological proximities.



Nayakar Mahal – Madurai

The ornate stucco work and multi-arched colonnades reflect similarities in the verandah and facade articulation of Udayarpalayam Aranmanai.

Figure 5 Photographic comparison of udayarpalayam Aranmanai courtyard and nayakas mahal courtyard

Iconographic Analysis:

The most significant surviving examples of the Udayarpalayam stucco school are located on the façade walls of the main courtyard and within the *Natagasalai* (Krishna Vilasam), the royal hall for dance, music, and entertainment. The iconography of the artwork is intrinsically linked to the function of this space, creating an immersive environment that celebrates the court's patronage of the performing arts. Based on the primary observation of the site, the walls are adorned with "innumerable images of dancers" and other celestial figures. These are not static representations but are captured in the moments of dynamic movement. The dancers are depicted in various classical poses, their bodies gracefully contorted to convey a sense of rhythm and energy. The artists paid meticulous attention to detail, sculpting delicate facial expressions, elaborate hairstyles, and ornate jewellery. The stucco friezes adorning the courtyard and *Natagasalai* are not merely a collection of decorative figures but constitute a cohesive and sophisticated narrative panel. Based on primary research, the central theme of this extensive artwork is *Krishna Leela*, the divine drama of Lord Krishna's life. What elevates this work and establishes it as a unique school of thought is the ingenious narrative technique employed by artisans. Rather than presenting isolated scenes, they created a visual language in which the background flora and fauna function as contextual indicators, thoughtfully signifying the specific location of each episode in the drama. This method demonstrates a profound level of Indigenous knowledge, blending storytelling with a deep understanding of natural and mythical symbolism. For instance, the depiction of monkeys is highly significant in the film. In the stories of Krishna, monkeys are portrayed as mischievous participants in his childhood antics, echoing his own playful nature as *Makanchor* (the butter thief), as he often shared his stolen

butter with them. Their presence in a stucco panel would immediately signal to the viewer that the scene is one of Krishna's youthful escapades in the pastoral setting of Gokul or Vrindavan.

Similarly, the peacock is inextricably linked to Lord Krishna, who famously wears its feathers in his crown. As a symbol of beauty, divinity, and nature, the inclusion of peacocks likely situates the narrative within the idyllic forests of Vrindavan, where Krishna's

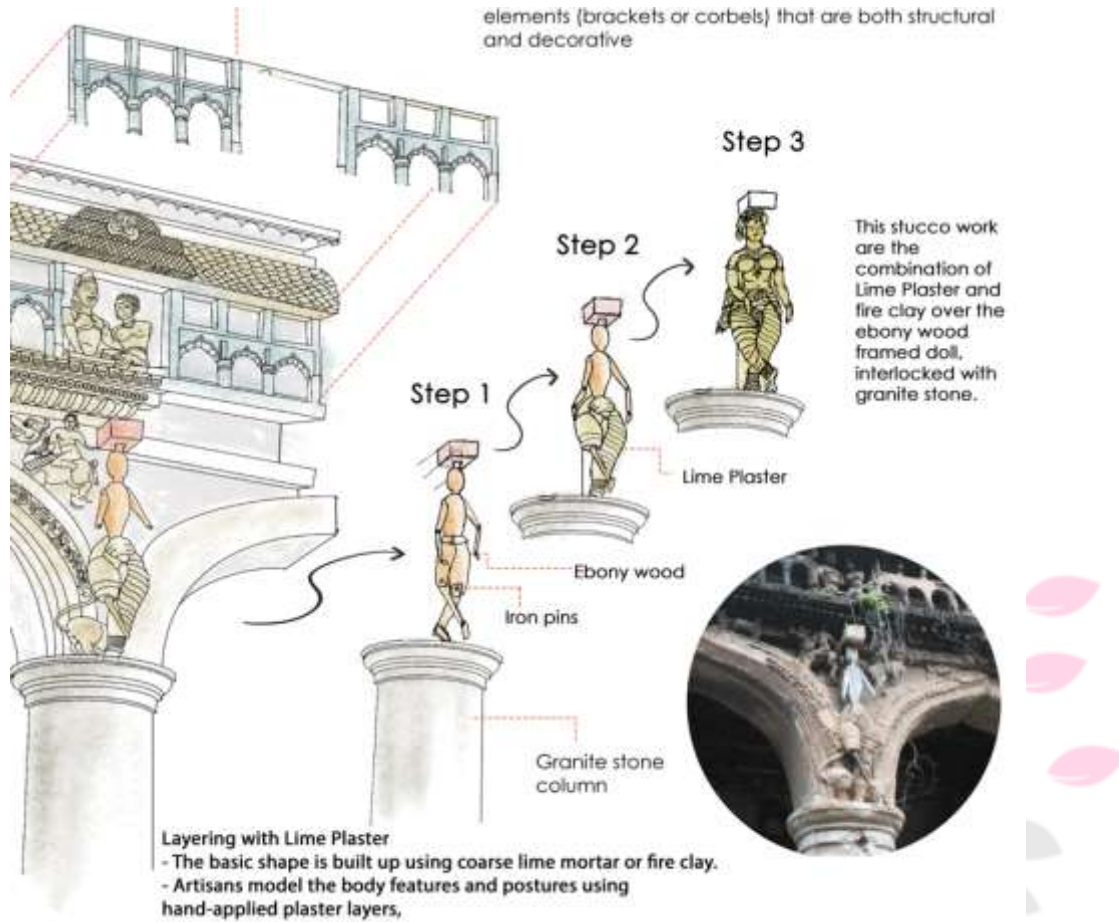


Figure 6 construction detail and process of stucco sculpture

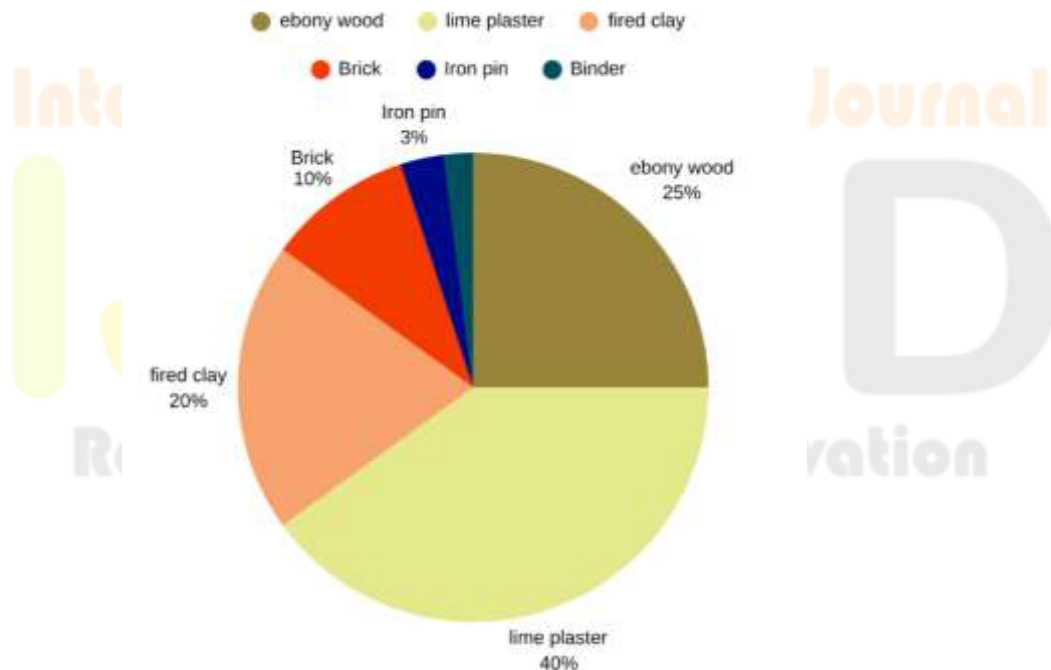


Figure 7 Pie chart of material composition in the stucco art work

flute-playing causes the birds to dance in joy. The presence of other birds, such as parrots and doves, adds further narrative layers. Parrots, often seen as messengers of love, could signify romantic episodes between Krishna and Radha, while doves, symbols of peace and innocence, might frame more serene pastoral moments of the Leela. In contrast to these naturalistic settings, the inclusion of the mythical *yali*, a composite creature with the body of a lion and features of an elephant or horse, serves a different narrative purpose. The *yali* is a powerful guardian figure in South Indian temple architecture that symbolizes strength and protection. Carving a *yali* into the background of a scene could therefore signify that the event is taking place in a sacred or palatial precinct, such as a temple in Mathura or within Kansa's imposing palace, clearly distinguishing it from rural scenes of Vrindavan. This thoughtful

craftsmanship showcases that the Udayarpalayam artisans did not just sculpt figures; they created a complex visual lexicon. By encoding locations within the background fauna and flora, they crafted a dynamic and easily legible narrative for the court audience. This technique elevates stucco work from mere ornamentation to a sophisticated form of narrative art, adding immense value to its significance as a distinct artistic school. Interspersed with these figures are other traditional motifs, including fierce, *Yali* (mythical leonine creatures) and intricate floral scrolls frame the main composition and enrich the decorative scheme. The placement of these figures within *Natagasalai* was deliberate. The hall was the cultural heart of the palace, where the Udayarpalayam rulers hosted court musicians and dancers, such as the famed 19th-century composer Ghannam Krishna Iyer.

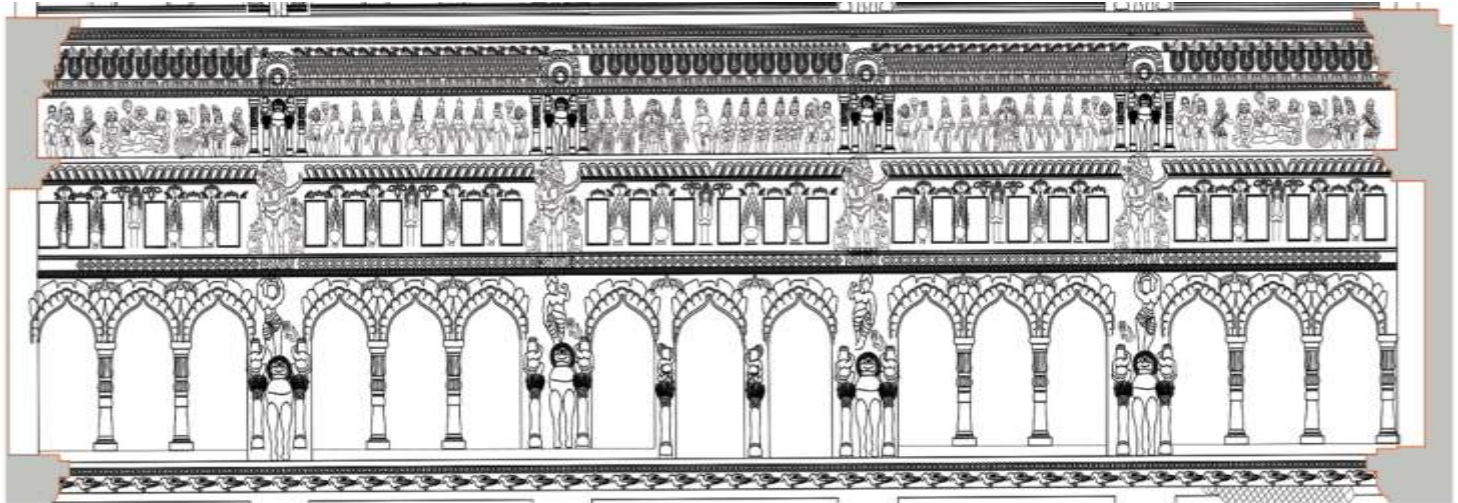


Figure 9 Elevation drawing shows the stucco art details



Figure 8 Photograph of elevation from nadagasalai shows the stucco art work in the aranmanai

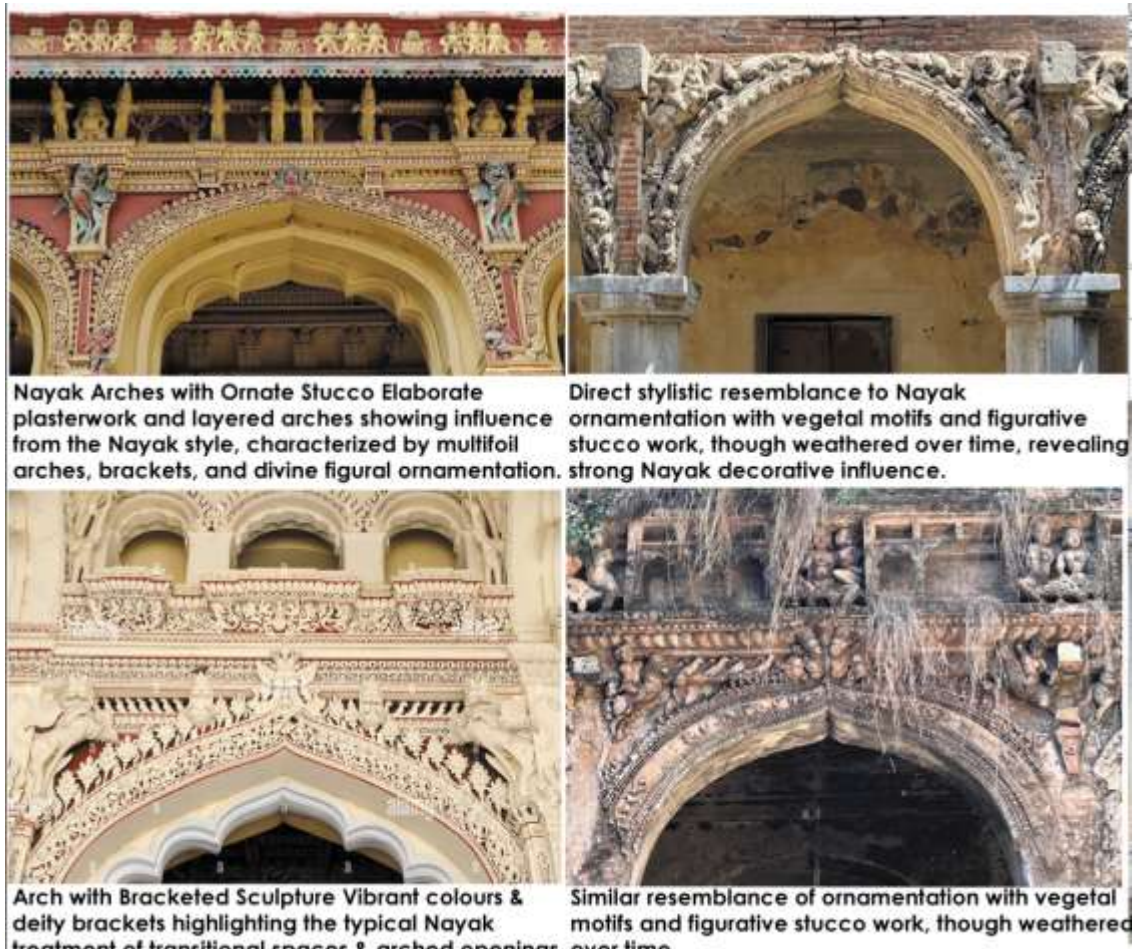


Figure 10 Photographic comparison of udayarpalayam Aranmanai Arches stucco and nayakas mahal arches

DISCUSSION

The technical and iconographic findings of this analysis strongly support the classification of the Udayarpalayam stucco work as a distinct school of thought. The innovative armature-based method and sophisticated use of fauna as narrative pacemakers are defining characteristics not widely seen in other Nayaka-period secular art. The placement of these elaborate Krishna Leela panels within the Natagasalai directly reflects the hall's function as a center for the performing arts, where patrons like the famed composer Ghanam Krishna Iyer were hosted. This chart visually demonstrates the central thesis this research Focus on 3D Sculptural Form the Udayarpalayam school scores a high '5' as its primary focus is creating dynamic, three-dimensional, projecting figures (as described in your "A Unique Construction Process" section). The General Nayaka style scores lower, as its *chunam* technique is described as a "smooth, glossy surface finish." Multi-Layer Material Complexity: Udayarpalayam scores a high '5' due to its complex, multi-stage process (Karungali armature, cloth wrap, *Sunnab* plaster). The General Nayaka *chunam* technique, while skilled, is rated as less *composited* (a '3'). Narrative Sophistication (using fauna): The Udayarpalayam school is rated a '4' for its "ingenious narrative technique" of using fauna (Yali, peacock, monkey) as contextual indicators. This specific technique is not

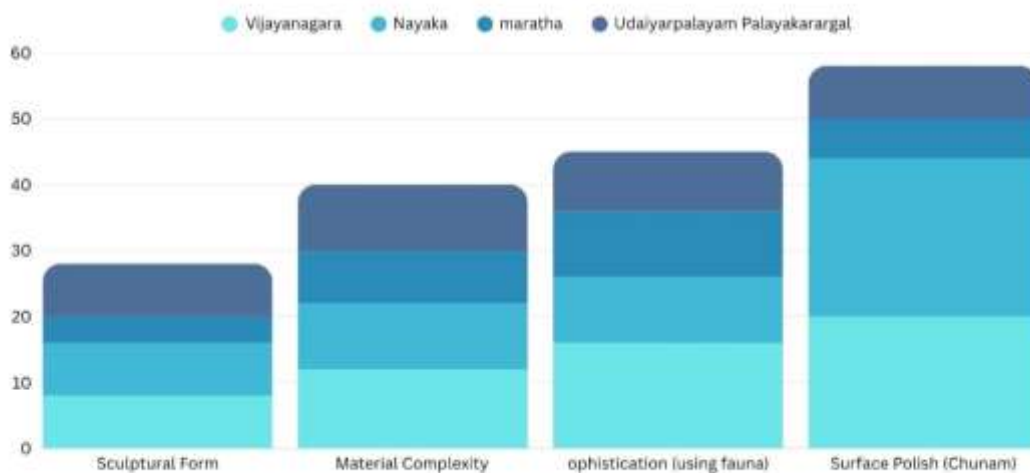


Figure 11 the spider chart shows the comparison of nayakas and Marathas influence in Udayarpalayam Aranmanai

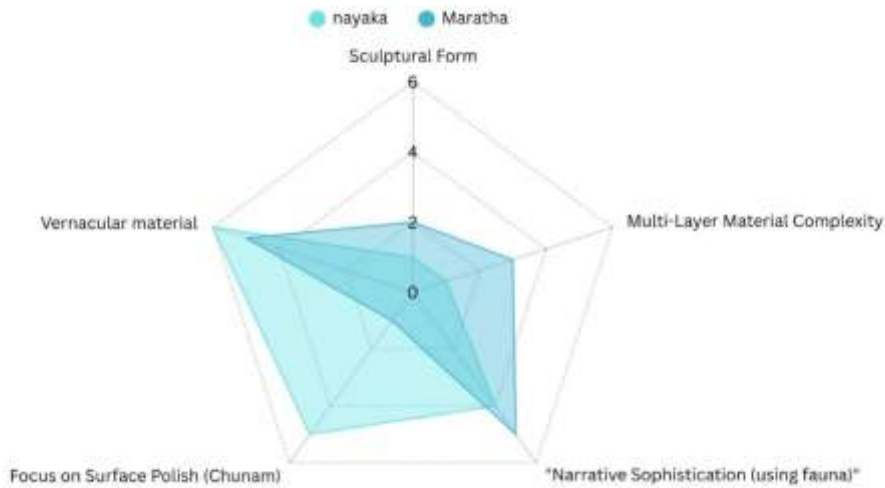


Figure 12 the comparison bar chart shows the influence parameter from the vijayanagara, nayaka, maratha, and undaiyapalayam palayakarargal

noted for the other style, which is rated '1'. Focus on Surface Polish (Chunam) This is the inverse. The General Nayaka style scores a '5' as this is its defining feature. The Udayarpalayam school, with its "coarse... lime and sand" plaster, scores a '1' as this was not its goal. The stucco dancers on the walls served as a permanent, idealized reflection of live performances, creating an immersive artistic environment. The primary limitation of this study is the advanced state of decay of the Aranmanai, which prevents a complete inventory and analysis of all original artworks. Much of the evidence is fragmentary, and further studies will be contingent on the stabilization and conservation of the remaining structures. However, the available evidence is sufficient to establish the unique character and high artistic value of this tradition. The implications of these findings are significant, highlighting the need to broaden the study of Nayaka-era art beyond temple architecture and recognize the Palayakarargal courts as important centers of artistic innovation.

CONCLUSION

The stucco work of the Udayarpalayam Aranmanai represents a unique and sophisticated school of art. Its distinctiveness is rooted in the masterful use of local materials, particularly the symbolic Karungali wood, and a complex armature-based technique that allowed for the creation of exceptionally dynamic three-dimensional sculptures. Furthermore, the iconographic program demonstrates a highly developed narrative technique, using background elements to convey complex spatial information within the Krishna Leela story. This singular artistic tradition is now critically endangered. Therefore, it is imperative that the Udayarpalayam stucco work be comprehensively documented, studied, and preserved. Its recognition as a distinct school of thought is essential not only for a more complete understanding of Nayaka-period art but also for preserving a rare and irreplaceable chapter in Tamil Nadu's regional artistic heritage.

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