

Regional Architectural Characters of Odisha in Contemporary Buildings

Vaishnavi Eppili

Bachelors in Architecture, SPA Bhopal, Bhopal, MP, India

ABSTRACT

Architecture plays a vital role in representing the cultural identity of a region and shaping the way people experience its built environment. Odisha, with its diverse heritage of temples, vernacular dwellings, stupas, forts, palaces, paintings and craft traditions, holds diverse architectural characters that contribute to its distinct visual identity. However, in the contemporary context the integration of these elements is often inconsistent or absent. The intend of the research is to identify regional architectural characters of Odisha which can be further reinterpreted in a way that is relevant in contemporary architecture and contributes to regional identity. This focuses on the visual identity of exteriors of built form and finally to come up with recommendations that can be applied to future contemporary building designs. The study is conducted through secondary data-based analysis and literature case study analysis. Further a primary survey is conducted in form of questionnaires for architects and architecture students associated with Odisha to get their perception regarding the identity of state. This results in a set of design-based recommendations to guide future architecture in Odisha, emphasizing form, spatial organization, materiality, ornamentation, and visual expression. By bridging identified characters with contemporary practices, the research seeks to strengthen place-making, enhance memorability and reinforce Odisha's architectural identity in its contemporary built environment.

Keywords: Place identity | Visual memory | Memorability | Contemporary Buildings | Architectural Characters | Ornamentation | Patterns | Facades | Materiality | Form

1. INTRODUCTION

1.1 Background study

1.1.1 Evolution of regionalism

Architecture is not just about creating functional spaces as per human needs but also it acts as a medium for defining identity of a place. People's memories and experiences of their surroundings are influenced by the designing of buildings, streets, and public areas.

The idea of connecting architecture with its surroundings has existed for a long time. However, the importance of Regionalism grew in the mid-20th century as a response to the uniformity of Modernism. Regionalism focused on designing buildings that resonate with local landscapes, climates, resources, and cultures. This approach made architecture feel more genuine and linked to its environment. Over time, though, this strategy often turned into mere imitation of historical designs or superficial use of local materials. It often overlooked a deeper understanding of current needs. To tackle this problem, architects and theorists like Liane Lefavre, Alexander Tzonis, and Kenneth Frampton proposed the idea of Critical Regionalism. Critical Regionalism aimed to rethink regional traits within a modern context. This

concept sought a balance between global architectural language and the unique identity of each location. The designs are both innovative and future-focused, while still considering local culture, climate, context and environment. Critical Regionalism emerged as a thoughtful link between tradition and modern design. (Değerlendirme, 2024)

A theoretical foundation for this was established by Kenneth Frampton (1983) in his work *Towards a Critical Regionalism: Six Points for an Architecture of Resistance*. He underlined the need for regional architecture to combine universal modern forms with inherent cultural characteristics, while being locally based and sensitive to global culture. Among his main points that architecture should adapt to the nature of its surroundings in order to turn space into a meaningful location rather than existing as a stand-alone object. He mentioned architecture should interact with terrain, temperature, and light, emphasising the conversation between culture and nature. Crucially, Frampton also emphasized on Perception of architecture visually as well as by other human senses (tactile, audio, taste and hearing). (Sumantra MISRA1, 2018)

“Critical regionalism can be defined as an architectural approach that strives to counter the homogeneity inherent in modernist architecture. By using contextual forces, critical regionalism imparts a sense of place and meaning to architecture. (Sanyam Bahgan, 2018)”

1.1.2 Neglect in Contemporary Buildings

The 1990s economic liberalisation of India aided in the growth of international corporate style. In response to criticism of this style of architecture over the years for being insensitive to its urban setting, some Indian architects adopted the ideas of critical regionalism. Although many of these architects recognised the value of modernist concepts, they attempted to reinterpret them in light of regional physical and cultural settings, frequently through smaller design practices. Globalised forms have mostly been reproduced by large-scale undertakings in spite of these efforts. (Sanyam Bahga*, 2020)

A number of recent innovations have been based on general modernist models (Sumantra MISRA, 2017). India has developed several buildings that are out of place. Contemporary Buildings in India demonstrates how globalized shapes and standardized materials frequently ignore region specific characters, leading to a progressive loss of regional identity.

1.1.3 Introduction to Odisha

Due to geography, trade, and intercultural exchanges, Odisha has a diverse and multi-layered architectural legacy. Although it is commonly referred to as the "land of temples," its heritage encompasses a variety of styles. In order to build sustainable homes, tribes such as the Bondas, Saoras, and Kandhas used bamboo, mud, and thatch. Urban fortifications and permanent stone inscriptions were brought about during the Ashokan conquest in the third century BCE. Sharing motifs and symbolism, Buddhist and Jain centres like Lalitgiri, Udayagiri, and Ratnagiri constructed monasteries, stupas, and rock-cut caves. Odisha created the distinctive Kalinga temple architecture, found in famous structures like Lingaraj, Jagannath, and Konark. Later phases added forts, palaces, reinforcing Odisha's identity as a meeting ground of multiple traditions. (Soumyendu Shankar Ray, 2016)

The Kalinga temples, vernacular buildings, stupas, and palaces are all part of the state's renowned architectural legacy. However, they are frequently overlooked in modern settings. Urbanization and outside influences are changing cultural customs and generating hybrid identities that make it harder to express one's own regional identity (Parida, 2024). From traditional to Contemporary built forms changing traditional skylines and streetscapes, resulting in permanent changes to the city's heritage character. A study on the historic centre of Bhubaneswar-demonstrates how plot amalgamation and new

construction using contemporary materials effected the skyline of Ekamra Kshetra, Bhubaneswar (Gayatri Mukherjee, 2025).

All of the above indicate that global influences and fast modernization are putting strain on Odisha's tangible and intangible heritage. So examining how Odisha's regional architectural characteristics are being portrayed, reinterpreted, or overlooked in buildings is therefore crucial, as this could show how to better incorporate them into upcoming developments.

1.2 Need of the study

Odisha's architectural heritage is diverse, yet contemporary architecture often reduces this identity to generic forms influenced by globalization. A significant number of Indian architects and students lack sufficient knowledge of traditional regional architecture, which leads to the loss of cultural and contextual identity in the built environment. (Sanyam Bahga*, 2020)

So, there is a need to systematically identify Odisha's architectural characters providing with design Recommendations, as a result-place-making, memorability, and regional identity will be strengthened in the modern built environment. In addition, incorporating regional architectural characters into contemporary design is not only a matter of aesthetics but also of planning. Considering a regional perspective in urban planning can help create a cohesive architectural fabric and ensure that modern developments remain contextually harmonious. (Sanyam Bahga*, 2020)

1.3 Research Questions

- Which architectural characters of Odisha contribute most significantly to its regional identity?
- How have these architectural characters been reflected, reinterpreted, or neglected in contemporary buildings of the region?
- What strategies or approaches have been used in other contexts/cities to successfully integrate regional architectural identity into modern architecture?
- How can the identified architectural characters of Odisha be adapted and integrated into future contemporary buildings to enhance memorability, regional identity?
- What are the challenges and opportunities in incorporating Odisha's traditional architectural elements into modern design?

1.4 Aim

To identify regional architectural characters of Odisha and reinterpret it in a way that is relevant in contemporary architecture and contributes to regional identity.

1.5 Objective

1. To review the importance of incorporating regional architectural characters in contemporary architecture which will help determine applicability of such approaches.
2. To identify and document the regional architectural characters of Odisha as per various typologies that contribute to its visual identity.
3. To analyse contemporary buildings in the Golden Triangle region (Bhubaneswar, Puri, and Konark) for the presence, reinterpretation, or absence of these regional architectural elements.
4. To conduct a pilot survey in form of perception study to validate the analysis and gather insights from architects, students and professors of the region.

5. To provide design recommendations for adapting and integrating the documented regional architectural characters of Odisha into present and future architecture, enhancing the region's distinctiveness and memorability.

1.6 Relevance of Research

Integrating Odisha's rich architectural legacy into modern public structures is the main goal of this study in order to strengthen regional identity. It provides design recommendations that architects and designers can use to direct future contemporary projects i.e. how to create places that are both modern and regionally expressive by showcasing the careful adaptation of architectural elements.

1.7 Scope

- The study covers regional architectural characters drawn from specific typology buildings across Odisha including temples, stupas, heritage structures, local dwellings, Palaces.
- It will explore various building typologies to identify elements that represent visual identity and regional expression.
- For analysis, the case studies will focus on buildings in the Golden Triangle region.
- The findings aim to contribute toward a set of design-based parameters and strategies that guide future architecture in retaining visual identity, enhancing memorability, and strengthening place-making.

1.8 Limitation

- The contemporary building case studies are geographically limited to the Golden Triangle of Odisha (Bhubaneswar, Puri, Konark), a zone rich in heritage.
- The study addresses regionalism only in terms of visual identity (form, materiality, ornamentation, symbolism, and visual memory).
- Aspects such as climatic responsiveness, structural/technological systems, and socio-economic factors of regionalism are outside the scope of this research.
- The study primarily emphasizes exterior characters.
- The number of case studies will be limited as per availability of data, and time constraints.

2. METHODOLOGY

In order to choose the research topic of regionalism and contemporary architecture, the research approach starts with a background study in the field of regionalism in architecture. Based on study about important parameters, reflection in modern architecture, and their potential for visual identity, the selected study focusses on recognizing Odisha's regional architectural features and integrating them into modern structures. Secondary data study of different typologies of structures will be done in order to identify architectural characters. To determine the extent to which identity is preserved, reinterpreted, or ignored, case studies from Odisha, specifically from Bhubaneswar, Puri, and Konark will be examined. In order to synthesis recommendations that incorporates the results of character identification and case study analysis, a user perception survey is done for architects, researchers, professors and architecture students associated with Odisha. The methodology's final steps include forming recommendations and drawing conclusions to direct the incorporation of Odisha's local identity into future modern architecture.

2.1 Methodology Flowchart

Kindly refer to Figure 2.1 attached.

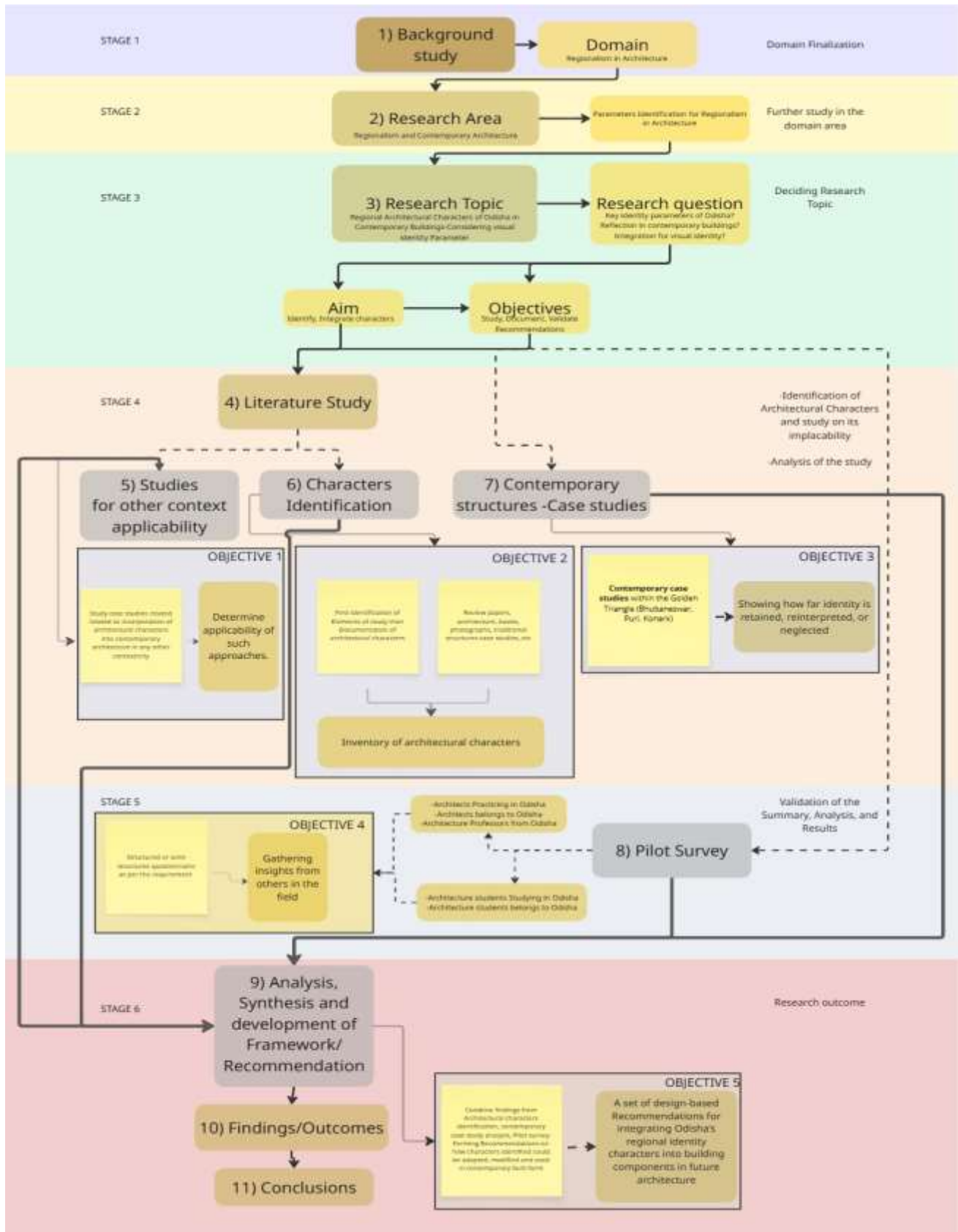


Figure 2.1: Methodology Chart

3. LITERATURE STUDY

3.1 Visual Identity in Architecture

When discussing architectural visual identity, it is a city or location frequently the first thing that comes to mind. The appearance of buildings and how people perceive them visually have always influenced Indian city identities in addition to history and culture. It emphasizes the argument that a place's distinctive and identifiable visual character is conveyed by its architectural styles, landmarks and the continuity of forms. Visual identity is dynamic, multi layered and subject to future reinterpretations. It emphasizes how a city's identity is strengthened and how it is understood and remembered is clarified when architectural language is in line with the local culture and history. However, forms can weaken the feeling of location when they are duplicated without context. (Kumar A. J., 2018)

3.1.1 Visual Architectural Elements

A bridge between historical beauty and contemporary demands is created when architectural elements are incorporated into contemporary practice. Following are some of the elements that contribute to visual identity of a place:

3.1.1.1 Structural components

In contemporary settings, traditional shapes like arches, columns, and domes can be revitalised. These aspects reimagined while maintaining their cultural and symbolic relevance by employing modern building materials and techniques. (Zhang*, 2024)

3.1.1.2 Decorative Elements-Facades

Even though ornamentation was formerly disapproved of by modernist movements, mouldings etc incorporation enhances architectural character by adding visual texture and cultural depth, producing vibrant surfaces. (Zhang*, 2024)

3.1.1.3 Concepts of Space (Courtyards, Atria)

Modern layouts influenced by traditional spatial concepts like courtyards and atria. These resulting in vibrant areas that will satisfy modern needs while preserving traditional elements. (Zhang*, 2024)

3.1.1.4 Textures, Colours and Materials

A balance use of traditional materials and surface textures in modern architecture. Create designs that are visually tied to the location while also meeting contemporary standards. (Zhang*, 2024)

3.2 Approaches to Incorporate regional Characters in Contemporary Architecture

3.2.1.1 Striking a balance between indigenous customs and contemporary innovation by fusing ancient wisdom with universally accepted contemporary norms. This meets the functional demands of the modern world while maintaining cultural continuity. This also includes visual expression; hence it is indirectly related to identity. (Kumar A. J., 2018)

3.2.1.2 Using forms or motifs as visual identifiers of culture, a method emphasises symbols as transmitters of identity. Instead, then focussing on individual structures, another method examines the cultural environment as a whole, viewing identity as a component of larger systems of urban form, society, and culture. In design, this expands the concept of identity. (Kumar A. J., 2018)

3.2.1.3 Another strategy is heritage preservation and reinterpretation, which protects and adapts existing architectural features for modern use. This reinforces the idea of continuity over time. Since surviving forms and materials continue to be visible indicators of culture, they are directly related to visual identity. (Kumar A. J., 2018)

3.2.1.4 A multimodal approach views identity as arising from a combination of rhetorical, visual, and material systems. This acknowledges that identity is multidimensional and changing rather than fixed. (Kumar A. J., 2018)

3.2.2 Case Studies

Some architects have effectively combined traditional architectural components with current designs in various cities and nations. These examples offer helpful insights for incorporating regional characteristics in contemporary architecture by demonstrating how cultural history and identity can be portrayed in modern constructed forms.

3.2.2.1 National Case studies

3.2.2.1.1 Vidhan Bhawan (1997), Bhopal, MP

Charles Correa's Vidhan Bhavan in Bhopal combines abstract modernity with traditional Indian architectural features. The floor plan is divided into nine sections, evoking the design of a classic Hindu mandala, while the overall shape is influenced by the adjacent historic Buddhist stupa at Sanchi. Open and semi-open courtyards improve interaction inside the building by serving as communal focal points and supplying natural daylighting and ventilation. A modern version of regional aesthetics is reflected in the façade, which uses a rough texture in earthy brown tones with bands of vivid blue. The design effectively strikes a balance between visual expression, utility, and cultural meaning, providing architects looking to maintain regional identity in contemporary structures with valuable insights. (Sanyam Bahgan, 2018)



Figure 3.1: Vidhan Bhavan, Bhopal (Sanyam Bahgan, 2018)

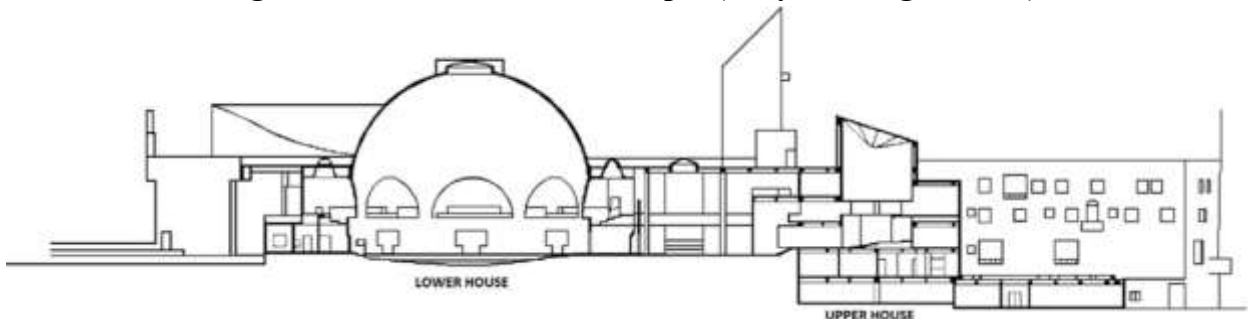


Figure 3.2: Section through Vidhan Bhavan, Bhopal (Sanyam Bahgan, 2018)

3.2.2.1.2 Dilli Haat, Delhi (Archohm Consults, 2014)

The Delhi tourism agency commissioned Janakpuri's Dilli Haat, which aims to replicate the atmosphere of a typical rural market. The complex, which is connected by native stone materials, consists of restaurants, craft stores, exhibition spaces, and an outdoor theatre. The focal point is the round, tent-like craft stores, which are made of stone and brick walls and have tensile canopies that let air flow while

offering shade. The design reflects local aesthetics and establishes a clear feeling of place by fusing bold contemporary shapes with regional expressiveness. The project shows how, in contemporary built spaces, materials and shape can convey cultural identity. (Sanyam Bahgan, 2018)



Figure 3.3: Dilli Haat, Janakpuri, Delhi

3.2.2.2 International Case studies

3.2.2.2.1 Suzhou Museum, China (2006)

Suzhou Museum by I.M. Pei combines contemporary architecture with the traditional Garden design. Its grey tiled roof and white walls pay homage to the area's history, but massive glass panels and geometric shapes add transparency and modernism while tying internal areas into the nature. In Water feature highlights the cultural significance of water in Chinese culture. The design creates a memorable and culturally relevant space by adhering to modern concepts while respecting the local surroundings. (Zhang*, 2024)



Figure 3.4: The Suzhou Museum (Zhang*, 2024)

3.2.2.2.2 National Museum of African American History and Culture, USA (2016)

This museum was created by David Adjaye and uses contemporary building methods while drawing inspiration from traditional African architecture. The inverted step pyramid pays homage to ancient Egyptian architecture, the bronze metal lattice honours past African American ironwork. Reflecting the cultural beliefs of African Americans, the porch-like entrance highlights outdoor gathering areas. Visitors will have a distinctive and culturally significant experience because of its design, which successfully conveys identity and history. (Zhang*, 2024)



Figure 3.5: National Museum of African American History and Culture (Zhang*, 2024)

3.2.3 Importance of Incorporating Traditional Elements

3.2.3.1 Preservation and Cultural Identity

In a globalised world traditional aspects help preserve cultural uniqueness. They provide people a sense of continuity and affiliation while preserving cultural heritage. (Zhang*, 2024)

3.2.3.2 Contextual Harmony with Surrounding Architecture

New construction can be a part of the landscape by adapting to local shapes, proportions, and materials. Instead of developments that seem out of place, this produces environments that are harmonious. (Zhang*, 2024)

3.2.3.3 Familiarity for Users

The blending of modern functionality with traditional elements can enhance the psychological ease of the users of the building. Known architectural forms and spatial arrangements can bring about positive emotions and make one feel safe and healthy. (Zhang*, 2024)

3.2.3.4 Sustainability

Using local resources and passive techniques, can be reinterpreted to create designs that are both culturally and sustainably based. (Zhang*, 2024)

3.2.3.5

4. DATA COLLECTION

4.1 Odisha's Architectural context

4.1.1 Historical evolution and Timeline

4.1.1.1 Maurya's in Kalinga (3rd century BCE)

During this time the rock edicts at Dhauli are the oldest known monuments in the area. (Soumyendu Shankar Ray, 2016)

4.1.1.2 Mahameghavahana dynasty (1st century BCE-1st century CE)

Rock-cut structures have been identified of the era under king Kharavela. Some of the forts including Sisupalgarh fortified village was constructed which are examples of early defensive planning. (Soumyendu Shankar Ray, 2016)

4.1.1.3 Monastic period of Buddhism and Jainism (5th century CE)

Lalitgiri, Ratnagiri, and Udayagiri are listed as the three main monastic centres of the time. Ratnagiri is specifically mentioned as a site of Mahayana/Vajrayana practice and as having flourished since the 5th century CE. Prior to the construction of massive stone temples, these locations were the primary centres of Buddhist and Jain architecture. (Soumyendu Shankar Ray, 2016)

4.1.1.4 Sailodbhava, Bhauma-kara Dynasty: Early temple phases (7th- 9th century CE).

Early structural temples like Parsurameswar and Vaital Deul came up in this period which signifies the shift from monastic and rock-cut forms to constructed temple typologies. The era is shown as the initial period of regional Kalinga temple architecture. (Soumyendu Shankar Ray, 2016)

4.1.1.5 Somavamsi Dynasty (9th-11th century CE)

The Somavamsi period mentions temples such as Mukteswar, Lingaraj, Brahmeswar and Jaganath temple complex. (Soumyendu Shankar Ray, 2016)

4.1.1.6 Eastern Ganga (11th-13th century CE)

Konark Sun Temple constructed during this time, emphasises the Eastern Ganga era as the time of colossal temple achievement. The Ganga dynasty is portrayed as having produced the most massive temple building in the area. (Soumyendu Shankar Ray, 2016)

4.1.1.7 Forts and Palaces (Mediaeval to early modern Period)

Fortified places like Raibania and Barabati (Cuttack) are examples of mediaeval architecture. Under later mediaeval and colonial transitions, palace complexes such as Mayurbhanj Palace and Paralakhemundi place, demonstrating the rise of palace building and hybrid influences in succeeding decades. (Soumyendu Shankar Ray, 2016)

4.1.1.8 Village architecture Evolved during all the period in historical timeline. (Soumyendu Shankar Ray, 2016)

4.1.1.9 Colonial and contemporary eras Planned modern interventions following independence the 1948 Bhubaneswar plan and subsequent contemporary architecture. (Soumyendu Shankar Ray, 2016)

4.1.2 Various typologies and Characters

Odisha has seen the emergence of multiple architectural typologies. Together, these diverse architectural forms include temples, forts, palaces, vernacular traditions, and Buddhist Jain monastery complexes define the architectural identity of the area. The following section outlines these typologies and some of their characteristics.

4.1.2.1 Temple Architecture

Odisha between 6th to 15th century evolved a unique type of temple construction called the Kalinga style which was influenced from nagara style architecture of north, these temples are notable for their consistent tradition, distinct shapes. Temples are often divided into three types based on their basic shape: Khakhara deula, which is a rectangular shrine with a barrel-shaped roof, Pidha deula, which is a square hall with a pyramidal roof and Rekha deula, which is a tall, curved spire that covers the sanctuary. Refer Figure 4.1 (Chand, 2023)

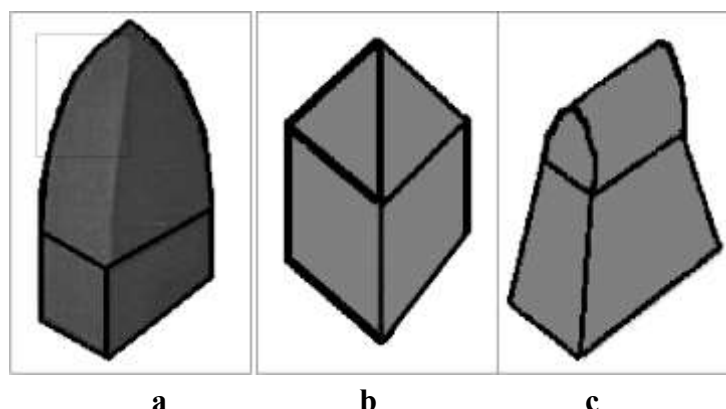


Figure 4.1: Basic Shape a) Rekha Deula, b)Pidha Deula, c) Khakhara Deula (Chand, 2023)

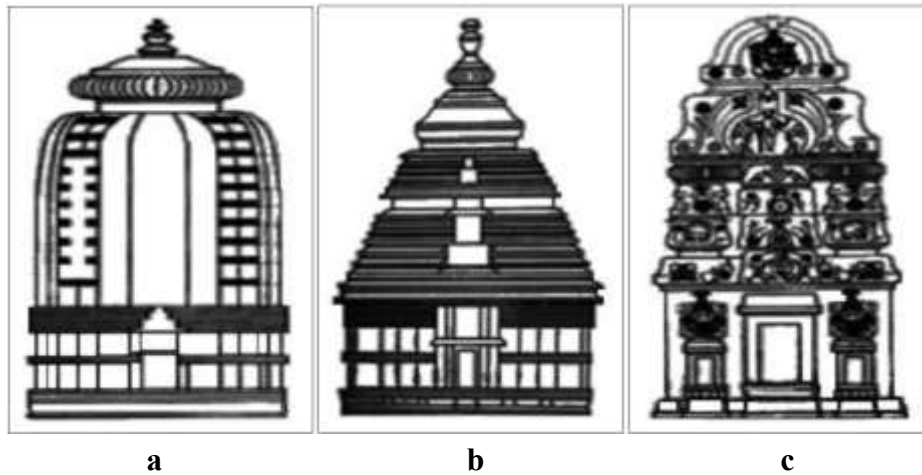


Figure 4.2: Line Drawings a) Rekha Deula, b) Pidha Deula, c) Khakhara Deula (Chand, 2023)

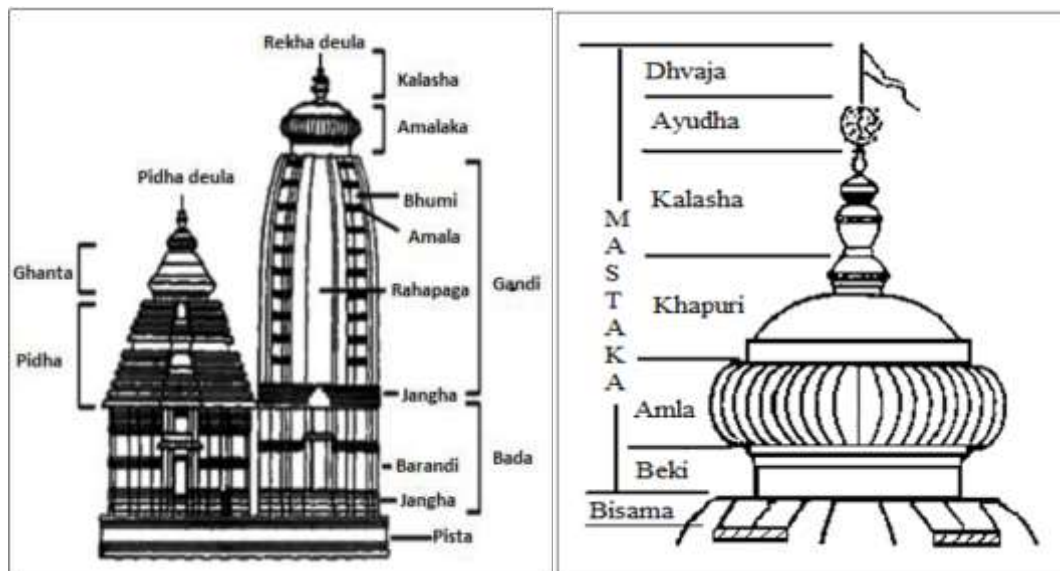


Figure 4.3: Vertical division of the temple structure (Chand, 2023)

A typical temple complex has four main buildings aligned axially: the hall of offerings (Bhoga Mandapa), the assembly hall (Jagamohana), the dance hall (Nata Mandira), and the shrine (Vimana). The Pista (platform), Bada (wall zone), Gandhi (spire), and Mastaka (crown) are the four separate components that make up these temples' vertical composition. Refer figure 4.3 (Chand, 2023) Temple construction developed methodically over centuries as discussed below.

4.1.2.1.1 Pre-Kalingan Phase (before 6th century CE)

Temples were small and simple, constructed of stone, brick, or wood and had an influence of buddhist architecture of the time. The temples in this phase had Rekha deula, showing the emergence of the curvilinear spire. (Bhuyan, 2017)

4.1.2.1.2 Formative Phase(6th -9th CE)

Mostly temples found around Bhubaneswar. Rekha deula appeared with a triratha(3 times projected) plan, and Jagamohana was presented as a hall with flat roofs and pillars. Elevations included minimal sculptured details. (Bhuyan, 2017)

4.1.2.1.3 Transitional Phase (9th–11th CE)

Introduction to intricate layouts: Jagamohana became a pyramidal, square pidha deula. There were sculptures that were both erotic and symbolic. Refer Figure 4.4 (Bhuyan, 2017)

4.1.2.1.4 Mature Phase (11th–13th CE)

Lingaraj, Rajarani, Jagannath, and Konark were the pinnacles of architecture. With the development of Natamandira and Bhogamandapa, the entire temple complex emerged. The five part bada evolved, the gandi was embellished with little shrines and the sculpture became highly polished and proportional. (Bhuyan, 2017)

4.1.2.1.5 Phase of Decline (14th–16th CE)

Temples built after the Ganga period were smaller and less ornate. As a result of Konark's climax, laterite frequently took the place of sandstone, decoration became minimal, and both vimana and jagamohana frequently adopted Pidha deula shapes. (Bhuyan, 2017)

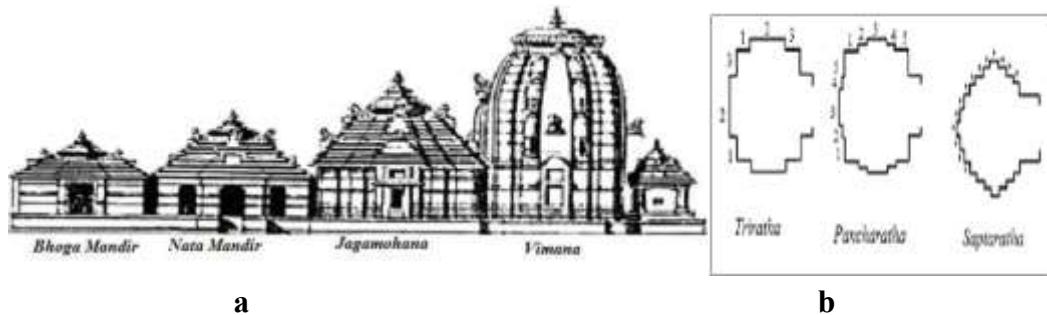






























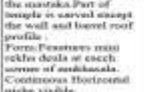
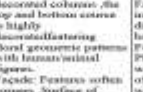










Figure 4.4: a) Parts of the temple, b) Sketch of various temple plans (Chand, 2023)

Some of the temples and their Characters have been tabulated below:

Table 4.1: Temple Architecture and characteristics of various temples

































Architectural Elements	Building Components	Vishnu Temple, Bhubaneswar	Maheshwar Temple,	Jagannath Temple	Jagannath temple, Puri	Konark Temple	Remarks on key elements
Structural Components							Basal platform, hierarchy of spaces, and axial planning can inform public building design for movement and symbolic entry.
Facade Elements	Wall						The walls are never plain they are divided into layers and projections that catch light and shadow. This idea can be adopted today by using this, patterned panels, or changes in surface depth to give buildings rhythm and character.
	Roof						
Form/Space	Roof						Chhatra/sambas as symbolic spaces can be reinterpreted with modern doming steel, glass, suspended concrete. Roof forms: slender tapering volumes for basadharis (shikhara-spired), stepped terraces, and varied volumes for covered public spaces (Shikhara-spired). The traditional construction (cast, poured, masonry). Abstracted motifs rather than literal sculpture: varied panels, patterned ground, geometric screens or light, and metal panels that catch proportions or motifs (shikhara, wheel, stylized flower) to give temples cultural references without replication.
	Entrance						
	Wall						
	Overall built						
Feature/Color/Material	Intricate, Shikhara, column, material						Context-based material palette (local stone, laterite, regional finishes, earth colors) can be integrated with modern construction. Abstract motifs or patterned ornamentation (stone screens, jalis, reliefs) can add cultural references without replicating historic detail.
Remark Temple site							

Source of Images used in table: Google search
 Information Source: (Prof. N.C. Panda, 2014)

4.1.2.2 Fort Architecture

Over the centuries, the forts of Odisha modified to demands of the military. Sisupalgarh had deep moats and thick walls, but Jaugada had gateways, broad moat, and ramparts made of earth. The central capital was protected by the Pancha Katak system, consisted of five forts positioned strategically during the 11th century. Barabati Fort in Cuttack included moats, ramparts, and stone walls for defence. Raibania Fort drew covered with forests, rivers, and three concentric walls. As Europeans arrived, forts like as Potagarh were modified to accommodate cannons, exhibiting radial layouts, lower walls, and gunpowder storage. The remains now show fort architecture in Odisha. (Soumyendu Shankar Ray, 2016)
 Some of the temples and their Characters have been tabulated below:

Table 4.2: Fort Architecture and characteristics of various forts

Architectural Elements	Building Components	Raibania Fort, Balasore	Barabati Fort, Cuttack	Gado Katanvia, Haripur	Purgarth, Ganjam	Remarks as per elements
Structural Components						Raised Platforms, use of arches in various fort observed.
Facade Elements	Wall					The fort facade is simple in comparison to temple architecture as it has different purpose.
	Roof					
Form/Space	Roof					
	Entrance					Looking at the overview of forms the use of geometric shape is mostly used in overall form with sometimes arched opening. Multiple columns have been observed in some fort structures.
	Wall					
	Overall built					
Texture Colour Material	Intricate design, colour, material					Local stone, laterite-inspired finishes, earthy colours, Exposed bricks can be integrated with modern construction. Geometric jaali designs can be incorporated in modern designs.
Remark Fort wise		Structural: It had a lancet arch opening. Facade: Thick wall lack any ornamentation. Form: Raibania was a large fortified city. Unique defensive design. Consisted of three concentric walls with 2 moats protected by river on three sides and thick scrub of bamboo and thorny bushes on the fourth. Materiality: Laterite block construction.	Façade: Exposed joints, alternate layers of blocks. Form: It was a nine storey built structure. Several columns excavation shows that the built structure had multiple columns. Material: Stone and earth construction.	Façade: Front has ornate decorative archways with columns, base had frieze work depiction of battles. Form: The influence of bishnupuri architecture from bengal is evident in curvilinear roof and terracotta carvings. Materiality: Terracotta zali like feature, lime plaster, Bricks.	Façade: Exposed brick. Façade visible. Form: There were clusters of fort with semi circular arch openings. Materiality: Stone and Brick.	

Source of Images used in table: Google search
Information Source: (Soumyendu Shankar Ray, 2016)




































4.1.2.3 Palaces

Odisha's palace architecture developed progressively over time, reflecting the various dynasties' external influences, cultural and political values. Palaces frequently functioned as both administrative and residential hubs. The Eastern Gangas, who moved their capital to Cuttack and erected Palace buildings inside Barabati. Palaces under the Bhanjas, Gajapatis, Bhois, and Nagas were increasingly ornate by the

Middle Ages. Because temples were sometimes erected inside palace complexes to represent the ruler's divine authority, these kings integrated habitation with ceremonial space. This blending of royal and holy roles is exemplified by the Bhanjas' Haripur and Baripada palaces or the Nagas' Junagarh palace. During the Sultanate and Mughal eras, palaces started to exhibit Islamic and Persian influences in the 17th century, especially in the form of arches, domes, and ornamental plasterwork. European colonial influence was dominant by the 19th century. The new governmental order under the British is reflected in palaces like Kanika, Nilagiri, and Paralakhemundi, which have neoclassical façade, columned halls, and even hybrid Indo-European characteristics. (Nayak, 2021)

Some of the Palaces and their Characters have been tabulated below:

Table 4.3: Palace Architecture and characteristics of various Palaces (Soumyendu Shankar Ray, 2016)

Architectural Elements	Building Components	Nagpur Palace, Bhanja	Haripur Palace, Baripada	Junagarh Palace, Puri	Sultanate Palace, Bhanja	Other Palaces, Odisha	Remarks on its elements
Structural Components eg arch, dome							Grand entrance to palaces were designed.
Facade Elements	Roof						Recurrent use of arches (barrel, ogee). Sometimes use of elliptic (elliptical) and decorative glazing ornament especially adapted facades with outside influence.
Form/Space	Roof						
	Entrance						Emphasis on symmetrical facade. Local planning (courtyards, axial layout) combined with external (Gothic/Greek arches), Islamic/Indo-Saracenic (granite, scalloped arches, jals) and European classical orders (Doric-Corinthian).
	Roof						
	Overall built						
Decorative Colour Material	Interior design, colour, material						Use of local masonry/terracotta and brick often finished with lime based mortars and later plaster/paint (polychrome, mural). Under used in roofing and structural members.
Remarks Palace wise		<p>Facade: Elevation depicts floral motifs above entrance. Continuous bas-relief carvings featured in corridors.</p> <p>Current plaster work are in shades of red and yellow.</p> <p>Form: Palace before the influence of colonial architecture. First clock tower of Odisha as a part of gate complex. Palace consists of three courtyards. It had outside influence to anticipate architecture in aesthetic style. Entrance gate hall, decorative carvings as a part of it. Later phases contained the richly decorated.</p> <p>Materiality: Shade of yellow.</p>	<p>Palace has been altered by various dynasties.</p> <p>Facade: The front facade resembles backahanga palace.</p> <p>Windows with elements of Victorian architecture.</p> <p>Form: Central tower and staircase leading to the hall. The gate complex was intricately designed. Old palace designed with influences from Victorian and Palladian architecture along with ornamental columns and low Indian elements such as pilasters, scalloped arches.</p>	<p>Form: Indo Saracenic style combined with Byzantine and European architecture. It had gables at two top of corners of entrance.</p> <p>Symmetrical layout. It has a blend of Gothic and Byzantine.</p> <p>Facade: The towers had lancet arches, continuous arches in balconies.</p> <p>Materiality: compound of stone, Timber, brick, marble elements (facade with red brickwork with white lime mortar and supported by brick, wood, brass and perforated).</p>	<p>Facade: Front facade has elliptic and plethoric similar to levels of elevation.</p> <p>Form: Designed with colonial influence.</p> <p>Reverend style of south and north tower walls. Different level of roofing height.</p> <p>Materiality: Combination of Yellow, Red.</p>	<p>Facade: Made of fired dressed dark red laterite and lime mortar.</p> <p>Form: It projects octagonal in front.</p> <p>Facade: Windows with stained glass with floral pattern and yonion arch.</p> <p>Materiality: Dark red, terracotta, brick, glass in windows.</p>	















Source of Images used in table: Google search
 Information Source: (Soumyendu Shankar Ray, 2016)

4.1.2.4 Buddhist, Jain Architecture

For almost 2,000 years, Odisha has been a significant for Buddhism and Jainism, and the architectural remains of these can still be seen across the area. Ashoka's rock edicts at Dhauri and the magnificent monastic sites of Lalitgiri, Ratnagiri, and Udayagiri had viharas, chaitya halls, and exquisitely carved sculptures are the first examples of Buddhism. The rock-cut caves of Khandagiri and Udayagiri has strongest evidence of Jainism. These caverns brought an early stage of cave architecture to the area with their relief panels, carved façades, and Tirthankara motifs. (Ray, 2013)

Some of the Buddhist, Jain architecture and their Characters have been tabulated below:

Table 4.4: Buddhist and Jain Architecture and characteristics of various structures

Architectural Elements	Building Components	Khandagiri and Udayagiri caves, Bhambhatawar	Ratnagiri-Mahavihara, Ratnagiri	Stupa at Dhauli	Remarks as per elements
Structural Components eg arch, dome					
Facade Elements	Wall				Rich in sculptural carving and iconography, with decoration.
	Roof				
Form/Space	Roof				
	Entrance				Emphasis on cells, verandahs, and courtyard arrangements in monasteries; stupas follow hemispherical forms.
	Wall				
	Overall built				
Exterior Colour/ Material	Intricate design, colour, material				Predominantly stone (laterite and local), sometimes plastered; surfaces rely on intricate carving rather than varied materials.
Remark Buddhist/Jain structure size		Form: These complexes have no symmetrical or rectilinear plan. the cells open into small verandah similarities to typical katcha houses of eastern india .Arches were used for openings . The temple inside the complex are build of large laterite stone . Facade: Carved with sculptural friezes having scenes of female dancing . The entrance arches are relieved with flowers , creepers .	Facade: More decorative than usual It has images of Jain considered to be the mother of buddha, ornamented walls which are later plastered . Form: Triclinic plan . Central courtyard with pillered verandah surrounded by cells , sanctum .	Statues of buddha in deep niches of dome . Form: Similar to other buddhist stupas . Materiality: White plastered .	

Source of Images used in table: Google search

Information Source: (Ray, 2013)

4.1.2.5 Village Architecture

Village architecture is mix of climate-responsive design, traditional crafts, social structures that are established in the culture of the area. Tribal houses in Odisha, like those of the Bondas, Saoras, Kandhas, etc are made of bamboo, mud, thatch, wood. They have sloping roofs with deep overhangs to protect them from the strong rains during monsoons. They have multifunctional courtyards that improve airflow and make space for social events. (Mishra, 2021)

Craft and artisan heritage villages like Raghurajpur exhibit an east-west linear settlement with verandahs that acts as living and working areas. These villages are made of mud and thatch and are decorated with murals and symbolic elements that reflect the rich cultural identity rooted in folk arts. (Kumar R. , 2015) Weavers village such as Nuapatna and Singhpalli features Clustered linear housing, integrated handloom workstations, and open courtyards. To adapt to changing needs, these communities gradually combine contemporary materials with traditional ones. With public areas like temples, village tanks, and performance platforms acting as social hubs. (Dr. Sudha Panda, 2019)

Many features of Odisha’s monumental architecture were originated from village forms. Early temples evolved from domestic and ritual huts with thatched or bamboo pyramidal roofs, giving rise to the Rekha (curvilinear), Pidha (pyramidal), and Khakhra (vaulted) deula forms. Thus, the monumental stone temples of Odisha are transformation of the modest village dwelling into sacred form. (Sarangi, 2017)











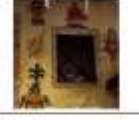































Figure 4.5: a) Chala ghara (common worship area), b) Nahachalia Pidha Deula (Sarangi, 2017)



Figure 4.6: a) Temporary Astaprahari Mandap b) Dwichalia Pidha Deula (Sarangi, 2017)

Some of the Village architecture and their Characters have been tabulated below:

Table 4.5: Village Architecture and characteristics of various structures

Architectural Elements	Building Components	Savara House, Odisha	Sambhal House, Odisha	Jawang House, Odisha	Rajbhairajpur, Odisha	Nuapada, Odisha	Remarks as per elements
Structural Components							Mostly timber posts, bamboo frames, or mud walls supporting lightweight roofs.
Facade Elements	Wall						Village facades are characterized by plain surfaces with murals, motifs, and symbolic art like Idials and Patachitra, with minimal openings and deep overhangs, often act as storytelling cultural identifiers.
	Roof						
Form/Space	Roof						
	Entrance						Most village houses follow compact forms, courtyards, and verandahs that create layered settlements form linear street edges with shaded social zones where daily activities spill outdoors.
	Wall						
	Overall built						
Texture Colour Material	Intricate design, colour, material						The material palette in villages relies on locally available resources mud, lime plaster, bamboo, laterite, timber, and thatch creating strong textural identity and climatic responsiveness. Surfaces often bear natural tones and hand-crafted finishes.
Remark as per Types		Structural components: Mud walls with high plinth for protection, low timber-framed thatched roof, and simple circular timber columns/bamboo. Facade: Plain, painted with red mud, lacking windows, sacred Idial wall art is often present. Form/Space: Roof with low and sloping, thatched with wild grass for rain insulation. Long verandahs. Materiality: Red-mud plaster, roof texture is grass thatch, sacred wall paintings (Idials) adds visual and tactile contrast.	Structural components: Unfinished timber columns. Facade: Highly decorated, frequently organized with floral, geometric, astral, glass pieces added for light/reflection, smooth surfaces for artwork. Form/Space: Sloping roof, with terracotta tiles. Exterior wall finish. Materiality: Exterior walls are smooth and visually striking because of bright colored motifs, murals of straw/terracotta tile roof creates textural contrast.	Structural components: Houses are low structures, around 6 ft high, with extremely low entryways, main walls form a compact enclosure; a spacious front verandah is characteristic. Facade: Facade is simple. Sometimes decorative wall is adorned by vivid set of birds and animals. Form/Space: Sloping roof with thatch. Materiality: Unfinished plume, thatch used for roofing.	Structural Components: Row houses built with traditionally high plinths (about 750 mm) for protection, now mostly brick structures due to government interventions with continuous verandahs along the facade provides workspace and circulation. Facade: Exterior walls vividly painted with Patachitra and various motifs, acting as both aesthetic display and exterior identity. Form/Space: Rows of houses, exterior form is linear and continuous, with verandahs supporting communal/craft activities and acting as transition zones between street and home. Materiality: Finished with organic plaster and painted in vibrant, naturally sourced colors for murals and decoration.	Structural Components: Linear, attached houses with brick or laterite walls, lime plastered surfaces, timber or bamboo roof structure (split/tile/corrugated sheet); open platforms outside houses for yarn stretching and weaving. Facade: Plastered facade, generally plain but sometimes with rice paste decoration. Form/Space: Work platforms and semi-open courtyards positioned on street side to facilitate weaving and dyeing processes. Materiality: Lime plastered masonry, other materials- bamboo, wood, and GI sheet roofing.	

Source of Images used in table: Google search

Information Source: (Mishra, 2021) (Dr. Sudha Panda, 2019) (Kumar R., 2015)

4.1.3 Summary

Odisha's architectural legacy includes temples, forts, palaces, Buddhist/Jain monuments, and vernacular villages architecture that define its unique identity and visual expression. These characters are deeply rooted in community and tradition.

Temple Architecture

The temples of Odisha shows an intricate layering of wall surfaces, articulated by projections and recesses that produce a dynamic interplay of light and shadow. Prominent roof typologies includes slender tapering Rekha spire, stepped Pidha terraces or vaulted Khakhara forms. Ornamentation includes both narrative sculptures and abstract motifs, often done with locally sourced sandstone and laterite. The axial spatial sequences and elevated platforms define movement and ritual significance.

Fort Architecture

Distinct from temple architecture, forts prioritize geometric clarity, robust fortification, and defensive functionality. Massive laterite and brick walls with guarded gateways and minimal ornamentation. The use of arches, columns, and traditional materials like lime plaster.

Palace Architecture

It shows the evolution of regional eclecticism, where local layouts like courtyards and axial symmetry were merged with Gothic, Indo-Saracenic, and European influences, which resulted in grand entrances façades with ornamental plasterwork, stained glass windows.

Buddhist and Jain Monuments

These structures were mainly rock cut architecture with cells, Some stupas were later constructed. Materiality includes carved stone surfaces in rock cut architecture and for stupas it was less intricate carving with white colored built form.

Village Architecture

Dwellings show climate responsiveness having high plinths, sloping thatched roofs for monsoon adaptation and use of bamboo, mud, and timber embodying sustainability. Courtyards and verandahs act as a space for social interaction, Spill over. The plain façades contrast with vibrant mural art, emphasizing cultural narratives and craftsmanship.

Overall Observations

Across typologies, the architectural characters of Odisha are unified by their roof forms, symbolic entryways, and a rich textual palette of natural materials, Ornamentation, whether narrative or abstracted, reinforces cultural memory and visual identity.

4.2 Contemporary Buildings in Odisha

4.2.1 Buildings reflecting regional characters into built form

4.2.1.1 Krushi Bhawan, Bhubaneswar

Krusha Bhawan in Bhubaneswar is designed by Studio Lotus. It is a 1,30,000 sq. ft government facility that redefines the image of an administrative building by integrating public, cultural, environment. It is both an administrative complex and a community hub, it accommodates around 600 officials while providing public spaces such as a plaza, learning Centre, library, auditorium, and training rooms. The ground floor is for public, which has a landscaped plaza with an Amphitheatre and water features, upper floors have government offices and the rooftop showcases urban farming demonstrations. The spatial hierarchy helps integrating administrative building into an inclusive civic space that actively engages citizens. (Abdel, Krushi Bhawan, Bhubaneswar, 2020)

Visually, the building expresses Odisha's regional architectural character through materiality, craftsmanship, façade design. Locally sourced laterite and khondalite stone, three-tone brick screens inspired by Ikat textile patterns, and handcrafted details such as dokkra metalwork, Patta Chitra-style carvings, stone inlay work depicts agriculture folklores. It has double-skin façade, recessed windows, and central courtyard which ensure passive cooling and daylighting, reducing energy demand while enhancing the building's aesthetic depth. Krushi Bhawan thus stands as a good example of contemporary regional architecture, merging tradition, craft, and sustainability. (Lotus, n.d.)

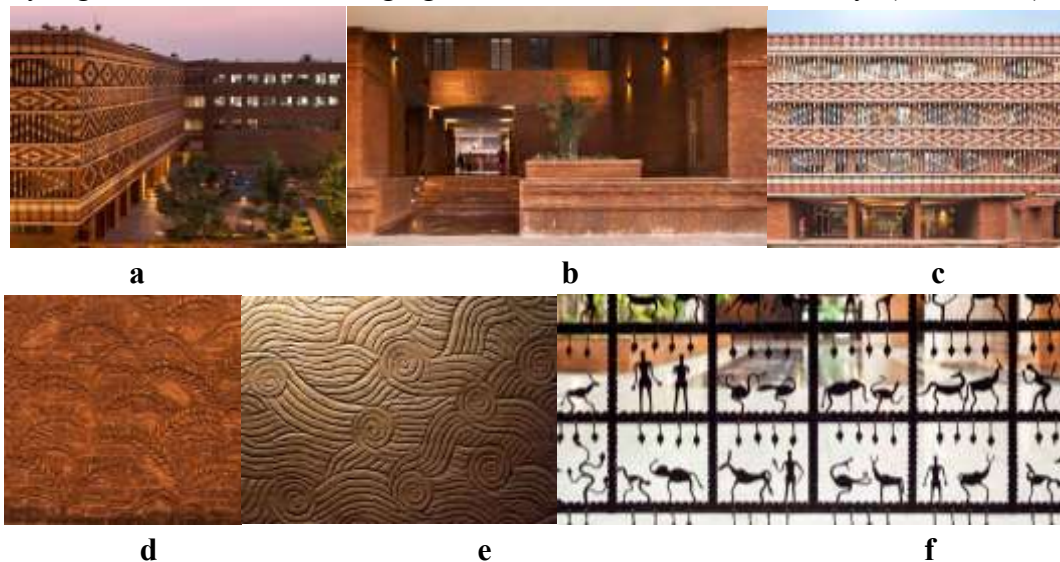


Figure 4.7: a) Krushi Bhawan, b) Materiality laterite, Khondalite, Exposed bricks, c) Façade, d) Intricate Design, e) Intricate design, f) Ornamentation

4.2.1.2 BJD (Biju Janata Dal) Party Headquarters, Bhubaneswar

The 1,22,546 m² Biju Janata Dal Party Headquarters in Bhubaneswar was designed by Studio Lotus in 2023. Its three story high in order to preserve a human size and a visual relationship with the street and the local population. The elevated ground plane provides area for public engagement like a restaurant, library and 360° audio-visual exhibition. Ribbon windows provide framed views of the surrounding on the higher floors, which is designed as open-plan offices, conference rooms, etc. (Abdel, Biju Janta Dal Party Headquarters, n.d.)

The facade was created in collaboration with Siddhartha Das Studio and is influenced by the craft and agricultural traditions of Odisha (Abdel, Biju Janta Dal Party Headquarters, n.d.). Culture and identity is symbolised by the hand-carved laterite reliefs made by regional artists featuring farming themes, Ikat and Sambalpuri weaving designs, and aspects of temple architecture. Visual character is continued inside with sculpted khondalite benches and metalwork inspired by Dhokra. The BJD Headquarters is a contemporary representation of Odisha's regional identity incorporated into contemporary buildings through its materiality, details.



Figure 4.8: a) BJD Party headquarters, b) Courtyard, c) Façade, d) Laterite compound wall e) Metal works for Railings and Gate

4.2.1.3 Kala Bhoomi -Odisha Crafts Museum, Bhubaneswar

Odisha State Crafts Museum completed in 2018 with site area of 12.66 acres shows vernacular architectural character of Odisha through form, materials and detailing. Design is organized around courtyards and verandahs creating shaded transitional spaces. Pitched roofs with tiles, exposed laterite and fly ash brick walls, give the buildings a distinctly regional identity. Architectural elements such as mud-finished surfaces reflect the warmth of traditional dwellings while painted murals reflects Odisha’s craft heritage. The facades are simple but textured with the use of earthy tones. (KalaBhoomi, n.d.)



Figure 4.9: a) Slope Roof, Textured surfaces, b) Wall murals, c) High Platform

4.2.1.4 ASI Konark Archaeological Site Museum & Konark Interpretation Centre, Konark

The Konark Interpretation Centre which is located near the Sun Temple, is spread across eight acres and serves as a visitor facility (suvechha, n.d.). Subtle references to the regional architectural character can only be seen in the entrance roof form and the little bit earth toned color palette which is not significant. The Centre is limited to use of vernacular materials or detailing such as carved stonework, column articulation, or decorative façade treatment in exteriors. Thus, it does not very effectively reflect the architectural character of Odisha.



Figure 4.10: Interpretation Centre

4.2.1.5 Municipal Market complex, Puri

This market has been redeveloped under the ABADHA scheme, transforming one of the city's oldest markets into a modern public space. Finished in August 2023, It is the six-story facility which covers 1.2 acres and has approximately 500 shops along with parking for 100 vehicles. The design is inspired by Kalingan architectural features, uses Khandolite stone, which reflects the visual and material characteristics of temple architecture. By incorporating façade elements, the project effectively connects heritage with modern design. (Redevelopment of Municipal Market on Bada Danda, n.d.)



Figure 4.11: Municipal Market Complex, Puri

4.2.2 Analysis

























4.2.2.1 Regional character in contemporary architecture is not adopted entirely; it is selectively interpreted based on the building's type and thematic intent. For example, the craft museum showcases village architecture to highlight local crafts, while Municipal market complex reflects the influence of Kalinga temple architecture, specific to temple architecture in Puri. Each building consciously chooses which elements to adopt and then it is adapted to express its narrative.

4.2.2.2 A key strategy in reflecting regional character is the majorly through the use of materials and ornamentation. Traditional textures, patterns, and detailing are reinterpreted using contemporary techniques, resulting in a dialogue between local heritage and modern construction practices.

4.2.2.3 Contemporary adaptations often involve local artisans, ensures authenticity in craftsmanship and also strengthens engagement of the community in the built environment.

4.2.2.4 Traditional murals, embellishments, or motifs are altered to meet the unique needs of modern structures. Because of this careful adaptation, regional characters can be meaningful in a contemporary structure.

















Table 4.6: Contemporary Buildings Case studies reflecting regional characters

	<i>Krushi bhawan, Bhubaneswar</i>	<i>BJD Headquarters, Bhubaneswar</i>	<i>KalaBhoomi, Bhubaneswar</i>	<i>Interpretation Centre, Konark</i>	<i>Municipal Market complex, Puri</i>
Architectural Elements					
Structural Components					
Facade Elements					
Form/Space					
Texture Colour Material					
Remark	<p>Strong use of regional materials like laterite, khondalite, and brick.</p> <p>Craft-based façade reflects Ikat and Pattachitra patterns.</p> <p>Ornamentation dominates more than the form.</p> <p>Effective integration of local artisans and cultural motifs.</p>	<p>Laterite reliefs and motifs enhance regional identity.</p> <p>Collaboration with craftsmen adds visual authenticity.</p> <p>Contemporary massing limits vernacular spatial influence.</p> <p>Regional character expressed mainly through façade treatment.</p>	<p>Clear vernacular expression through courtyards, verandahs, and tiled roofs.</p> <p>Local materials like laterite and fly ash bricks add authenticity.</p> <p>Spatial planning reflects village settings.</p> <p>Craft detailing is present reflecting wall paints in village architecture.</p>	<p>Minimal reflection of traditional Odishan architecture.</p> <p>Modern structure with only colour and entrance roof reflects regional characters.</p> <p>Lacks ornamental or material connection to context.</p>	<p>Kalingan architectural features adapted in façade.</p> <p>Khondalite stone use connects to temple architecture.</p> <p>Modern form.</p> <p>Balances heritage reference with contemporary function.</p>

4.2.3 Buildings not reflecting regional characters into built form

Now taking contemporary buildings located in the Golden Triangle region, observed through images. These examples represent design approaches with lack of regional architectural characters of the region.

Table 4.7: Contemporary Buildings Case studies not reflecting regional characters

	<i>Baramunda Inter-State Bus Terminal (ISBT), Bhubaneswar</i>	<i>Biju Patnaik International Airport, Bhubaneswar</i>	<i>Odisha state convention centre, Bhubaneswar</i>	<i>Taj Resort, Puri</i>
Architectural Elements				
Structural Components				
Facade Elements				
Form/Space				
Texture Colour Material	<p>Exhibits modern structural design with exposed steel frames.</p> <p>Facade and color palette are abstract and industrial, lacking reference to Odisha's traditional architectural motifs.</p> <p>Form and spatial arrangement prioritize function over regional identity.</p>	<p>Large-scale modern terminal with curved roofing and steel structures.</p> <p>Facade pattern and glass-heavy exterior create a globalized look, missing regional stylistic cues.</p> <p>Open and linear circulation spaces are efficient but do not evoke local spatial traditions.</p>	<p>Simple modernist design with minimal ornamentation.</p> <p>Columns and roof shade are generic; exterior finishes don't reference local materiality or craftsmanship.</p> <p>Form and massing focus on contemporary aesthetics.</p>	<p>Resort adopts modern resort typology with horizontal facades and regular fenestration.</p> <p>Exterior lacks integration of local materials (like laterite, terracotta).</p> <p>Overall aesthetic is prioritizing luxury.</p>
Remark				

4.3 Primary Survey

To understand the “Perception of Regional Architectural Character in Odisha” by others in the architecture field a primary survey in form of semi structured questionnaire was done for various architects, Architecture Students, Researchers, Professor, etc. It consisted of 39 questions mix of multiple choice, Likert chart, Perception based questions and open-ended questions. The mode of survey was Google forms and The survey received 36 responses. (Refer Figure 4.12)

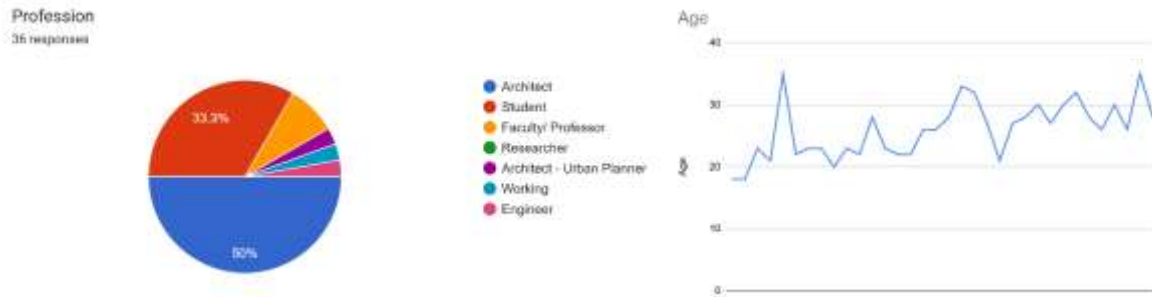


Figure 4.12: Distribution of responses

4.3.1 Responses Summary

Refer Table 4.8

Table 4.8 Summary for Responses

Questions	Sub Parts (If any)	Sequence	Percentage of People
Which building type do you feel represents Odisha most strongly?	Temples		100%
	Palaces		16.70%
	Forts		5.60%
	Buddhist Jain Monuments		38.90%
	Villages		33.30%
Familiarity with Building typologies in Odisha		Temple > Villages > Buddhist Jain Monuments > Palaces > Forts	
Visual Recognition			
How strongly does this image convey Odisha’s identity?	Temple Image attached		97% Says Extreme Strongly
	Palaces Image attached		66% Range from slightly to Moderately

	Forts Image attached		Mix of opinions from not at all to strongly
	Buddhist Jain Monuments Image attached		80% ranges from Strongly to Extreme strongly
	Villages Image attached		Around 91% Says Strongly to Extreme Strongly
Which feature makes it feel regional in above images from various building typologies in Odisha?	Temples	Intricate Detailing > Ornamentations > Roof > Spatial form > Structural Member > High Plinth > Material	
	Palaces	Facade > Material > Texture > Wall > Structural Members	
	Forts	Facades > Materials > Ornamentations > Structural Member > Textures	
	Buddhist Jain Monuments	Spatial forms > Structural members > Materials > Colour	
	Villages	Roofs=Materials & Patterns=Paintings > Walls > Colour > Texture	
If you were re-interpreting this architectural identity in a contemporary project, which strategy fits best as per you?		Combinations > Materiality > Abstract	
As per your understanding rate importance of each aspect for expressing Odisha's visual identity.		Local crafts > Forms and roof types > Facades> Symbolic elements > Materials	
What, in your opinion, should dominate future contemporary design in Odisha?			80% says incorporating elements from regional architecture
Perception			
Which typology offers more		Temple > Villages > Buddhist	

conceptual inspiration while designing ?		and Jain architecture	
Which traditional element could be most successfully abstracted in contemporary architecture in case of Odisha?		Materiality textures > Intricate patterns > Roof Profile > Facades	
Contemporary Perception			
How effectively it reflects Odisha's visual identity. [1 = Not at all, 2 = Slightly, 3 = Moderately, 4 = Strongly, 5 = Extremely Strongly]			
	Krushi Bhawan, Bhubaneswar Image		Around 93% Says Strongly to Extreme Strongly
	BJD Headquarters, Bhubaneswar Image		Around 68% Says Strongly to Extreme Strongly
	Kala Bhoomi, Bhubaneswar Image		Around 82% Says Strongly to Extreme Strongly
	Interpretation Centre, Konark Image		68% Says moderately
	Municipal Market complex, Puri		69% says moderately to strongly
Identify the dominant element of regional expression in contemporary case studies mentioned above:	Krushi Bhawan, Bhubaneswar	Materials > Patterns or Paintings > Ornamentation	
	BJD Headquarters, Bhubaneswar	Materials > Ornamentation > Patterns or Paintings	
	Kala Bhoomi,	Materials > Spatial form >	

	Bhubaneswar	Patterns or Paintings	
	Interpretation Centre, Konark	Material > Structural	
	Municipal Market complex, Puri	Materials > Ornamentation > Patterns	
Which case study do you think achieves the most balanced reinterpretation?		Krusha Bhawan > kala Bhoomi > BJD Headquarters	
Implementation and Future Direction			
What are the three biggest barriers to incorporating authentic regional features in contemporary projects as per you?		Cost maintenance > lack of skilled artisans > Client's preferences for global aesthetics > Lack of documentations or building codes or framework	
Which two strategies would make regional identity more visible in future buildings?		Involving craftsmen during design, teaching regional studio modules in architecture colleges, creating design guidelines for modern reinterpretation, Using local materials and finishes	
Rank following approaches in order of what you feel best represents a regional identity for Odisha's contemporary architecture. [1- Most preferred, 3-Least Preferred]		Blend of elements from all typologies (temple, palace, fort, Buddhist-Jain, village > Use of a single dominant typology elements per project > Varying approach based on site context and Requirements	

4.3.2 Responses Analysis

4.3.2.1 All respondents are familiar to temples of Odisha. The other major typologies include Villages and Buddhist and Jain architecture which shows People relate more to architecture that is part of their everyday environment or cultural or religious heritage.

4.3.2.2 Forts and Palaces are least recognized showing that these are not closely connected to the image of Odisha's architecture.

4.3.2.3 As per responses temple architecture followed by Village architecture followed by Buddhist and Jain monuments are strongest in representing identity of Odisha.

4.3.2.4 The Identified elements that reflect the identity of temples are Intricate Detailing, Ornamentations, unique roof forms and Materials. The identified elements that reflect the identity of Villages are materiality color, texture, paintings and patterns along with roof form. The Identified elements that reflect the identity of Buddhist and Jain architecture are spatial forms, Structural Members. The specific identified elements for each typology form the identity of built form.

4.3.2.5 The combinations of abstract forms of the identified elements is suggested to be reflected in contemporary architecture by most. This concludes to adapt traditional ideas creatively rather than just coping.

4.3.2.6 As per 80% incorporating elements from regional architecture in contemporary architecture should be considered.

4.3.2.7 As per responses the abstract/Modified form of major elements like materiality textures, ornamentation, façade detailing and paintings/patterns should be reflected in contemporary buildings in Odisha.

4.3.2.8 In contemporary buildings, Krushi Bhawan followed by Kaala Bhoomi and BJD headquarters was rated highest for successfully reflecting regional identity mentioning the efficient use of regional material, facades with ornamentation or patterns or paintings in modified form.

4.3.2.9 Konark Interpretation Centre and Municipal market complex was rated least for reflecting regional identity due to more generic design or not thoughtful in incorporation of regional elements.

4.3.2.10 As per responses there is a need for training programs, documentation of regional characters, and to form design guidelines that can be followed in professional practice.

4.3.2.11 Involving craftsmen during design, teaching regional studio modules in architecture colleges, creating design guidelines for modern reinterpretation, Using local materials and finishes would make would make regional identity more visible in future buildings.

5. RECOMMENDATIONS

5.1 Recommendations

The following recommendations are based on comparative study of various typologies, evaluation of contemporary examples, Perception survey analysis. This will guide the architects or designers by providing the basis of incorporating the identified regional architecture characters in contemporary built form.

5.1.1 Temple Architecture

5.1.1.1 Insights: As per survey almost every one temple architecture is strongest in representing identity of Odisha and the key features are intricate detailing, ornamentation, unique roof forms and materiality.

5.1.1.2 Recommendations

5.1.1.2.1 Abstract intricate detailing in façade patterns or Jaali panels with modern geometric patterns and materials like concrete, brick instead of literal carvings-modern moldings can be done.

5.1.1.2.2 Use regional materials like laterite, sandstone facades with craftsman-produced finishes to preserve tactile memory.

5.1.1.2.3 Light shadow articulation for creating depth on a flat surface using temple-inspired vertical and horizontal niches.

5.1.1.2.4 Incorporate symbolic gateways or transitional entrance zones to show hierarchy of spaces.

5.1.1.2.5 Use of axial design or symmetrical form.

5.1.1.2.6 The unique roof forms can be reinterpreted for skylights in buildings with materials like glass and steel.

5.1.2 Village Architecture

5.1.2.1 Insights: As per survey it is most recognized after temple architecture and the key features are Roofs, Materials, Patterns, Paintings, Colour, Texture

5.1.2.2 Recommendations

5.1.2.2.1 Incorporate metal works in railings, Gates, Jaali pattern which is one of the elements found in village doors and is one of the key features in present contemporary examples with regional characters.

5.1.2.2.2 Sloped roof can be reinterpreted for overhangs, shaded canopies, or for building units.

5.1.2.2.3 Incorporate murals or painted wall patterns (Patta Chitra or Saora styles) with unique themes on selected walls.

5.1.2.2.4 Incorporate Semi open verandah and courtyards in contemporary designs.

5.1.2.2.5 Use natural material palettes (laterite, terracotta, lime plaster, bamboo, timber shades) with other complementing color schemes.

5.1.3 Buddhist & Jain Architecture

5.1.3.1 Insights: Key features identified are spatial form, structural members, Materiality and color.

5.1.3.2 Recommendations

5.1.3.2.1 Use geometry and repetition to create a sense of order and tranquility for typologies of building it will work.

5.1.3.2.2 Minimal ornamentation with creating attraction.

5.1.3.2.3 Use of axial design or symmetrical form and structural elements like domes.

5.1.3.2.4 Apply stone-like or exposed concrete finishes for timeless appearance without ornamentation.

5.1.4 Palace Architecture

5.1.4.1 Insights: Lesser-known typology for identity of Odisha. So, unique architectural features from this typology should be incorporated in a way that will create an identity linking Odisha in future. Key features includes structural members and facades.

5.1.4.2 Recommendations

5.1.4.2.1 Limit ornamentation to key nodes like entries or balconies in buildings

5.1.4.2.2 Recurrent use of structural members like arches integrating with region specific materials or color palette which will make it connected to Odisha rather than just outside influence.

5.1.4.2.3 Symmetrical or axial planning can be incorporated in contemporary designs.

5.1.5 Fort Architecture

5.1.5.1 Insights: Least recognized-associated mainly with scale and material robustness. Features: massive plinths, gateways, strong wall textures.

5.1.5.2 Recommendations:

5.1.5.2.1 Use rough-textured materials (exposed brick, laterite, rough stone).

5.1.5.2.2 Raised Platforms, Higher plinths or stepped bases adding grandness to building forms.

5.1.6 Other Recommendations

- 5.1.6.1 Materiality is the strongest regional connector which can be used for reflecting regional identity.
- 5.1.6.2 Craft integration is other major aspect that should be considered along with other parameters of visual identity.
- 5.1.6.3 The contemporary building designs should be abstracted as per the identified features and should not be literal replication. As per context identified features from multiple typologies should be integrated together.
- 5.1.6.4 Include skilled artisans in design–build processes to ensure continuity of traditional craftsmanship.

5.2 Results and Discussions

- 5.2.1 The study shows that temple and village architecture are the strongest visual representation of Odisha's identity while Buddhist and Jain architecture is also identified as per responses.
- 5.2.2 For all typologies materiality and ornamentation was most relatable elements of identity.
- 5.2.3 Minimal case studies successfully reinterpret Odisha's regional character through abstraction, Materiality and craft integration.
- 5.2.4 Material acts as primary element connecting regionality and modernity.
- 5.2.5 High cost, Maintenance and absence of formal guidelines were identified as key barriers to incorporating regional characters.
- 5.2.6 There is need for documentation, training programs, and design framework to help architects translate regional identity into modern practices.
- 5.2.7 The study shows that regional identity can coexist with modern designs through creative reinterpretation and contextual adaptations.
- 5.2.8 Architects should approach regional identity as a dynamic, evolving language.
- 5.2.9 The overall results indicate that architecture in Odisha must integrate regional characters with innovations to remain rooted in its identity.

6. CONCLUSION AND FUTURE SCOPE

6.1 Conclusions

The study fulfills the aim of identifying visual architectural characters of Odisha and exploring the ways to reinterpret in contemporary buildings. The objectives were of identifying characters, check whether its reflected in contemporary practices and the professional perception were achieved through comparative and analytical methods. The survey shows that Odisha's architectural identity is primarily defined by materiality, ornamentation, spatial form which forms the visual identity of place. The research concludes that regional identity should be expressed through abstraction and adaptation rather than replication. The study concludes with recommendations for blending regional visual elements in contemporary architecture enabling architects or designers to create built environments that is rooted in place.

6.2 Future Scope

- 6.2.1 Inclusion of study modules in academic curriculum to promote sensitivity towards local identity.
- 6.2.2 Development of regional design framework and guidelines to help designers.

- 6.2.3 Inclusion of local craftsman for designing.
- 6.2.4 Exploration of technological applications or techniques that can be integrated with this.
- 6.2.5 Scope of enhancing documentations of regional buildings.
- 6.2.6 The other parameters of regionalism can be studied.

6.3 Future Work

The future work will focus on applying the findings of this study to specific building typologies.

REFERENCES

1. Abdel, H. (2020, June 17). *Krusha Bhawan, Bhubaneswar*. From Arch daily: <https://www.archdaily.com/941738/krushi-bhawan-studio-lotus>
2. Abdel, H. (n.d.). *Biju Janta Dal Party Headquarters*. From Arch Daily: <https://www.archdaily.com/1019031/biju-janta-dal-party-headquarters-studio-lotus#>
3. Bhuyan, R. (2017). Evolution of kalingan architectural style of temple-A study.
4. Chand, A. (2023). Chronicles of kalinga temple architecture. *International journal of history*.
5. Dalai, N. (2022). Importance of fort, special reference to. *International Journal of Advances in Engineering and Management (IJAEM)*.
6. Değlerlendirme, M. T. (2024). An Evaluation of Regionalism in Architectural History. *International social science journal*.
7. Dr. Sudha Panda, P. C. (2019). A Case for Conservation of the Sustainable Vernacular Weavers' Settlement. *International Journal of Applied Engineering Research*.
8. Gayatri Mukherjee, S. D. (2025). Impact of Urban Developments on. *ISVS e-journal, Vol. 12, Issue 02*.
9. *KalaBhoomi*. (n.d.). From Architects Studio: <https://architectsstudio.co.in/kalabhoomi/>
10. Kumar, A. J. (2018). Architecture identities of indian cities. *International Journal of Management, IT & Engineering*.
11. Kumar, R. (2015). An Artisan Heritage Crafts Village: Indigenous. *Civil Engineering, Architecture and Environmental Engineering for sustainable development*.
12. Lotus, S. (n.d.). *Krusha Bhawan | Institutional workspace*. From Studio Lotus: <https://www.studiolotus.in/projects/krushi-bhawan>
13. Mishra, D. (2021, May 14). *Selected tribal houses of vulnerable tribes of odisha*. From lunarsecstacy.com: <https://lunarsecstacy.com/2021/05/14/few-traditional-tribal-houses-of-odisha/>
14. Nayak, L. (2021). An Overview Upon some existing palaces of odisha.
15. Parida, B. (2024). Impact of Globalization on the Cultural and Identity Fabric of. *Quest Journals Journal of Research in Humanities and Social Science*.
16. Prof. N.C. Panda, P. K. (2014). *Temple Architecture of Orissa*. Delhi: Bharatiya Kala Prakashan.
17. Ray, H. P. (2013). *Buddhist Heritage of Odisha*. New Delhi: National Monuments Authority.
18. *Redevelopment of Municipal Market on Bada Danda*. (n.d.). From OBCC: <https://obcc.in/work-details?id=657977a441b3bc16dfb11b56>
19. Sanyam Bahga*, G. R. (2020). Complexities of practicing architectural regionalism in india: An interview study. *Frontiers of Architectural Research*.
20. Sanyam Bahgan, G. R. (2018). An account of critical regionalism in diverse Building types in postcolonial Indian architecture. *Frontiers of Architectural Research*.

21. Sarangi, S. S. (2017). Influence of Vernacular Architecture in Evolution of temple forms of odisha. *International Journal for Innovative Research in Science & Technology*.
22. Soumyendu Shankar Ray, K. M. (2016). *Odisha an architectural odyssey*. Bloomsbury.
23. Sumantra MISRA, M. C. (2017). CRITICAL REGIONALISM IN THE POST-COLONIAL ARCHITECTURE OF . *Journal of Architecture and Urbanism*.
24. suvechha, S. (n.d.). *Konark interpretation centre*. From Slide Share: <https://www.slideshare.net/slideshow/konark-interpretation-center-arka-khestra/272201357#8>
25. Zhang*, Z. (2024). The Influence of Traditional Architectural Elements on Modern. *Highlights in Science, Engineering and Technology*.