

METAPHORIC ARCHITECTURE IN PAINAN MARITIME MUSEUM DESIGN

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ABSTRAK

Arsitektur metafora mampu menerjemahkan fenomena budaya dan alam ke dalam narasi spasial yang terbaca. Artikel ini mengembangkan kerangka lima variabel—metafora sumber, atribut kunci, alih ranah, narasi spasial, dan keterbacaan simbolik—yang disintesis dari studi preseden (Jewish Museum Berlin karya Libeskind dan Museum Tsunami Aceh) dan diterapkan pada perancangan Museum Bahari Painan di Sumatra Barat. Sumber lokal seperti kapal tradisional pincalang, gelombang Samudra Hindia, dan aktivitas perikanan diolah menjadi bentuk massa menyerupai kapal, fasad bergelombang, kulit jala, serta sirkulasi linear yang membentuk narasi “pelayaran”: embarkasi, ketegangan, klimaks, refleksi, dan epilog. Analisis menunjukkan keseimbangan antara keterbacaan ikonik dan kedalaman konseptual, memungkinkan pengunjung menangkap identitas maritim lokal secara intuitif. Studi ini berkontribusi pada pengembangan metode perancangan museum berbasis metafora dan memberikan rekomendasi kontekstual untuk lanskap pesisir Pantai Carocok, Painan.

Kata Kunci: Arsitektur Metafora; Museum Bahari; Narasi Spasial; Keterbacaan Simbolik; Painan; Indonesia.

ABSTRACT

Metaphorical architecture translates cultural and natural phenomena into readable spatial narratives. This article develops a framework of five variables—source metaphor, key attributes, domain transfer, spatial narrative, and symbolic legibility—synthesized from comparative precedent studies (Libeskind’s Jewish Museum Berlin and the Aceh Tsunami Museum) and applies it to the design of the Painan Maritime Museum in West Sumatra. Local sources such as the traditional pincalang boat, Indian Ocean waves, and communal fishing activities are transformed into a ship-oriented elongated mass, undulating façade, net-patterned secondary skin, and sequential linear circulation forming a symbolic “voyage”: embarkation, tension, climax, reflection, and epilogue. The analysis reveals a balance between iconic legibility and conceptual depth, enabling visitors to intuitively perceive local maritime identity. This study contributes to the development of a transferable design methodology for metaphor-based museums and provides contextual site recommendations for the coastal landscape of Carocok Beach, Painan.

Keyword: *Metaphoric Architecture; Maritime Museum; Spatial Narrative; Symbolic Legibility; Painan; Indonesia.*

1. INTRODUCTION

Architecture integrates art, science, and technology to produce built environments that meet human needs while enriching cultural life. Beyond technical performance, contemporary architecture is widely understood as a communicative medium-capable of conveying

symbols, narratives, and meanings through spatial experience and form [1], [2]. This shift in perspective foregrounds metaphoric architecture, which operationalizes cultural symbols, philosophical values, natural phenomena, and lived experiences to craft spaces that are visually legible and emotionally resonant within their

socio-cultural contexts. In this approach, meanings abstracted from nature, local philosophies, and historical memory are translated into new architectural expressions that shape deeper spatial experiences for users. Yet, despite its growing relevance, the field still lacks a consolidated, comprehensive theory and practice framework; applications remain conceptual and vary widely across projects and designers.

Within this discourse, Painan (Pesisir Selatan, West Sumatra) offers a potent maritime identity-anchored by Carocok Beach, Cingkuak Island and its Portuguese fort Remains, and enduring local fishing traditions—that merits architectural articulation through a public cultural institution. The proposed Painan Maritime Museum is positioned not merely as a repository of artifacts, but as a symbolic and educational platform that reconnects communities with their maritime heritage and strengthens place identity through meaningful spatial narration. A metaphoric design strategy is therefore pursued as an integrative response: it targets tourism and knowledge functions while giving architectural voice to local culture and coastal ecology.

To operationalize metaphor beyond intuition, this study employs comparative precedent analysis-particularly the Jewish Museum Berlin [3] and the Aceh Tsunami Museum [4]-as a basis for extracting principles, strategies, and transferable procedures. The research addresses three questions: (i) how metaphoric principles can be articulated via precedents to narrate history and identity and to mobilize natural phenomena as conceptual drivers for educational, emotionally resonant spaces; (ii) what the key similarities and differences are between the precedents and how these findings can be synthesized into a contextual and applicable methodology; and (iii) how the synthesized methodology can be applied to the conceptual design of the Painan Maritime Museum. The corresponding objectives are to (i) examine principles and strategies of metaphoric architecture in the two precedents; (ii) integrate the findings into a contextual, applicable methodological framework; and (iii) deploy the framework in designing the museum so that the resultant visual-spatial experience enhances visitor engagement.

The expected contributions are threefold. Theoretically, the study advances knowledge on

metaphor-based design by proposing a contextualized methodological framework derived from precedent synthesis. Practically, it provides a concept-to-design bridge for educational tourism facilities through clear analytical steps and criteria. Socially and environmentally, it supports cultural preservation, strengthens public awareness of maritime heritage and sustainability, and yields positive spillovers for local tourism and the coastal urban image.



Figure 1. Study Location – Carocok Beach, Painan

Table 1. Research Questions and Objectives

Research question	Objective
RQ1. How can metaphoric-architecture principles and approaches be articulated through precedent study to convey history and cultural identity and leverage natural phenomena as conceptual drivers for educational visual-emotional experiences?	O1. Examine principles and strategies of metaphoric architecture in the Jewish Museum Berlin and the Aceh Tsunami Museum as the precedent objects.
RQ2. What are the similarities and differences in applying metaphoric-architecture strategies across the two precedents, and how can the findings be synthesized into a contextual and applicable design methodology?	O2. Integrate the findings from the two precedents to formulate a contextual and applicable methodology for metaphoric-architecture design.
RQ3. How can the synthesized methodology be applied to the conceptual design of the Painan Maritime Museum?	O3. Apply the synthesized methodology to the design of the Painan Maritime Museum so that the resulting design enhances visitor experience through meaningful architectural visuals.

2. LITERATURE REVIEW

2.1 Conceptual foundations of metaphor in architecture

Metaphor provides a conceptual frame that lets designers translate abstract ideas into perceptible forms and experiences. In cognitive linguistics, metaphors map abstract source concepts onto concrete target domains (e.g., “arguments are war,” “time is money”), a lens that has been carried into architectural thinking to structure meaning through form, space, and sequence. Historically, authors such as Kevin Lynch, Le Corbusier, Mies van der Rohe, Frank Lloyd Wright, and Robert Venturi positioned architecture as a symbolic medium, embedding narration, cultural memory, and visual language into built form.

2.2 Typologies of architectural metaphor (Antoniades)

[5] Antoniades distinguishes three categories frequently mobilized in design: (1) intangible metaphors-derived from ideas, cultural values, or human attributes; (2) tangible metaphors—borne from recognizable physical objects or visual cues; and (3) combined metaphors-where conceptual and visual sources intertwine through transformation rather than literal replication. These categories often co-exist in exemplary works; for example, the Aceh Tsunami Museum synthesizes a tangible “wave” roofline with intangible notions of protection and resilience drawn from Acehese tradition, yielding a contemporary memorial through combined metaphorical operations.



Figure 2. Jewish Museum Berlin-reference image

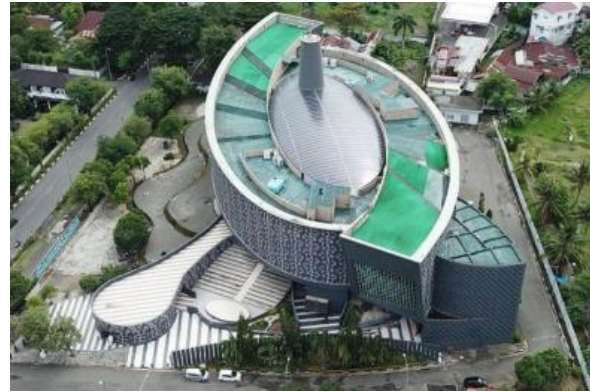


Figure 3. Aceh Tsunami Museum-exterior

2.3 Analytical variables for metaphor-driven design

Building on Antoniades’ poetics, the thesis operationalizes metaphor into five evaluative variables that move from source to experience: (1) metaphor source, (2) key attributes, (3) cross-domain transfer strategies, (4) spatial narrative, and (5) symbolic legibility.

1. Metaphor source.

A metaphor begins with a conceptual domain-nature, history, myth, or culture—that seeds design intention and frames architectural translation; this aligns with Lakoff & Johnson’s conceptual metaphor theory.

2. Key attributes.

Rather than copying whole forms, designers extract salient, diagnostic features from the source to carry meaning (e.g., movement, strength, resilience) into architecture.

3. Transfer strategies.

Attributes are transformed into spatial/formal systems through abstraction, distortion, simplification, and fragmentation-constituting an analogical “structure mapping” rather than mere formal mimicry.

4. Spatial narrative.

Architecture becomes a poetic journey; sequences of light, movement, and enclosure narrate emotion and meaning across spaces, echoing Tschumi’s triad of space-event–movement.

5. Symbolic legibility.

Metaphorical communication must remain readable and contextually

anchored (culture, history) to sustain public meaning rather than private symbolism.

Table 2. Variables, definitions, and indicators

Variable	Definition	Indicators
Metaphor Source	The conceptual domain that initiates metaphoric design; can derive from nature, history, myth, or culture.	• Clear source domain is identified (e.g., nature, history, culture, myth) • Target domain in architecture is stated (where the metaphor is realized)
Key Attributes	Salient characteristics extracted from the source domain that are most meaningful to be transformed into architecture.	• Distinctive features from the source are specified • Attributes (character) appear consistently
Domain-Transfer Strategy	The process of transforming attributes into architectural form through strategies such as abstraction, distortion, simplification, fragmentation, or reinterpretation.	• Transformation method is explicit • Relationship between source and design outcome remains traceable
Spatial Narrative	A sequence of spaces that serves as a medium for story and emotion, rather than a mere container of functions.	• Continuous sequence that forms a coherent story • The spatial journey elicits specific emotional experiences
Symbolic Legibility Evaluation	The extent to which the architectural metaphor is readable and understood by users/visitors.	• Symbols/metaphors recognizable to users • Symbolic links to local cultural/historical context are evident

2.4 Precedent-based diagramming and knowledge transfer

Clark & Pause [6] propose “precedent-based diagrams” to distill parti and formative ideas from exemplars into reusable design intelligence. The workflow: (1) select relevant precedents; (2) capture brief context; (3) extract core ideas; (4) reduce massing to basic geometry; (5) diagram context (access, sun, historical axes); (6) map internal sequences; (7) summarize material and light; and (8) extract transferable principles for new projects. This process translates iconic works into compact conceptual toolkits while preserving contextual fit and narrative coherence.

Table 3. Precedent-based diagramming steps (Clark & Pause)

Step	Diagram / Task	Purpose / Output
1	Precedent selection	Choose architectural works conceptually/typologically relevant to the design theme.

2	Brief contextual description	Describe function, location, and the core conceptual idea of each precedent.
3	Main idea & development	Identify the precedent’s key idea and trace how it is developed in the design.
4	Basic geometry diagram	Reduce massing/patterns to simple geometric forms to reveal the parti.
5	Context diagram	Map mass–context relations (access, circulation, sun orientation, historical axes); make quick sketches to consolidate understanding.
6	Internal space diagram	Depict circulation and the sequence of key spaces that structure the narrative.
7	Material & light diagram	Summarize primary material character and how light/shadow model its meaning.
8	Principle extraction	Review all diagrams to trace conceptual patterns that can be adopted in the new design.

2.5 Illustrative precedents in the literature

Within memorial architecture discourse, the Jewish Museum Berlin is read through “counter-monument” theory and spatial narration, demonstrating how absence, void, and fractured paths communicate collective trauma; the Aceh Tsunami Museum similarly intertwines wave geometry with local typologies to stage remembrance and preparedness-both frequently cited in metaphor-focused scholarship. The Aceh Museum’s roof-wave and stilt-house logics exemplify dual coding of disaster memory and indigenous resilience, aligning tangible–intangible–combined categories and the five-variable framework above.

2.6 Implications for a maritime museum in Painan

A metaphor-led approach is especially apt in coastal Painan-rich in maritime history and identity-where variables such as source selection (seascape, craft, and cultural memory), attribute extraction (motion, tensile patterns, resilience), and spatial narrative (from peril to hope) can be tuned to local contexts and publics.

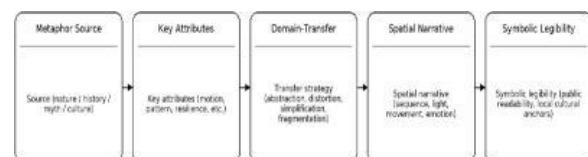


Figure 4. Five-step Metaphor Modeling Diagram

2.7 Regional positioning: Indonesia and Southeast Asia

Indonesian and Southeast Asian scholarship consistently employs metaphor- and narrative-

driven design to communicate local identity, disaster memory, and maritime culture. In Indonesia, studies of the Aceh Tsunami Museum explain how wave and *rumoh Aceh* metaphors are translated into a multisensory sequence (constriction–darkness–sound–emergence), evidencing the link metaphor → spatial narrative → visitor affect [7]. Work on Menara Pinisi (Makassar) interprets the tower as a ship-based metaphor for educational identity—tangible maritime imagery abstracted into vertical massing and façade syntax [8]. Concept papers on maritime museums similarly frame hull/wave/net as publicly legible drivers across site, skin, and interior [9].

Beyond Indonesia, Southeast Asian references reinforce the same logic. In Thailand, analyses of Museum Siam (Bangkok) foreground story-based exhibition sequencing to negotiate place, history, and identity—evidence that narrative architecture is an established curatorial–spatial strategy [9], [10]. In Malaysia, research on the Islamic Arts Museum Malaysia (Kuala Lumpur) discusses symbolism and motif repetition as architectural communication tools, linking envelope/detailing with cultural meaning and visitor learning—supporting this article’s focus on symbolic legibility [11].

Crucially, at the city scale, the “Garden” metaphor in urban branding & planning (e.g., Singapore’s ‘Garden City’ → ‘City in a Garden’) shows how metaphor frames identity and environmental imagery beyond buildings, positioning the present study within the wider SEA metaphor discourse that spans architectural, curatorial, and urban levels [12], [13].

Table 4. RRL-SEA. Selected Southeast Asian studies on metaphor/narrative design

Region	Type / Case	Metaphor or Narrative Focus	Key takeaway for this article
Indonesia (Aceh)	Aceh Tsunami Museum	Wave + <i>rumoh Aceh</i> ; multisensory remembrance sequence	Strong proof of metaphor → spatial experience in an Indonesian museum [7].
Indonesia (Makassar)	Menara Pinisi (UNM)	Ship (<i>pinisi</i>) as educational/metaphoric icon	Tangible maritime metaphor → massing & façade language [8].
Indonesia (Belawan)	Maritime Museum (concept)	Hull/wave/net as drivers across site–skin–interior	Publicly readable maritime symbolism in museum typology [9].

Thailand (Bangkok)	Museum Siam	Narrative architecture for identity/history	Validates story-driven sequencing in SEA museums [10].
Malaysia (Kuala Lumpur)	Islamic Arts Museum Malaysia	Symbolism & motif repetition in museum architecture	Supports symbolic legibility as a visitor-learning vector [11].
Singapore (city scale)	Urban branding & planning	“Garden” metaphor in city identity and environmental imagery	Positions your study within SEA metaphor discourse beyond buildings [12], [14].

3. RESEARCH METHODOLOGY

3.1 Research Design

This study adopts a qualitative–descriptive design with a precedent study method to probe how metaphoric strategies are realized in built works and to derive a transferable framework for the Painan Maritime Museum. The approach is suited to unpack design meaning, spatial narratives, and symbolic values from realized projects, thereby informing an applicable, contextual methodology for metaphor-driven design. Prior work [15], [16] supports precedent study as a reflective and conceptually grounded route for design-based research.

3.2 Precedent selection

Precedents were selected purposively to ensure metaphoric relevance, experiential quality, data availability, and cultural–natural contextuality comparable to Painan. The two primary cases are: (i) Jewish Museum Berlin (Daniel Libeskind), which deploys historical–cultural metaphor via fragmented form and reflective spatial experience; and (ii) Aceh Tsunami Museum (Ridwan Kamil), which translates natural-disaster phenomena into an educative, emotionally resonant narrative.

Table 5. Precedent-selection criteria

Criterion	Description	Operationalization (checks)
Metaphoric relevance	Precedent explicitly deploys metaphor (intangible/tangible/combined) to structure concept and form.	• Clear metaphor stated in sources / design statements / scholarly readings
Experiential quality & spatial narrative	Precedent articulates a legible sequence (arrival–transition–climax–reflection) that conveys meaning.	• Evidence of narrative path, light/sound/void effects, and user movement

Documentation availability	Reliable drawings/photos/text sources are accessible for analysis and citation.	Published plans/sections/axon, reputable articles/books, museum/architect website
Cultural–natural contextuality	Context resonates with Painan’s maritime/cultural identity or disaster/heritage memory.	Coastal or memorial setting; engagement with local typology/materials

3.3 Data collection

Three streams of qualitative data were employed: (1) literature on conceptual metaphor [17], architectural metaphor [5], memorial and spatial-experience studies; (2) precedent documentation (drawings, photographs, circulation maps, design concepts, official publications) for both cases; and (3) contextual data for Painan (geography, tourism, maritime culture, coastal ecology, and planning documents from BPS and the Tourism Office).

3.4 Variables and indicators

Analysis operationalizes five variables-metaphor source, key attributes, domain-transfer strategy, spatial narrative, and symbolic legibility-with indicators used to evaluate each precedent and to guide synthesis. (Detailed definitions and indicators are tabulated in Literature Review/Table 2.)

3.5 Tools and materials

The study uses visual-analysis software (AutoCAD, SketchUp, Adobe Illustrator) for interpreting form and spatial patterns, documentation media (camera, digital literature, site maps), and conceptual analysis media (precedent-comparison matrices, concept maps, narrative diagrams).

3.6 Data-analysis procedure

Analysis proceeds in four stages:

- Individual precedent analysis**
Identify metaphoric concepts, design strategies, spatial narrative, and experiential qualities in each case.
- Comparative analysis**
Map divergence and convergence of metaphor application across variables between the two precedents.
- Synthesis of findings**
Integrate insights into a stepwise metaphor-design procedure aligned to the five variables

and readied for application to the Painan project.

d) Contextual validation

Check relevance of the synthesized approach to Painan’s coastal identity and educational aims.

Table 6. Variable-wise comparison (Jewish Museum vs. Aceh Museum)

Variable	Jewish Museum Berlin (JMB)	Aceh Tsunami Museum (ATM)	Convergence / Divergence
Metaphor Source	Collective trauma, diaspora, absence; fractured traces of the Star of David; voids as vessels of memory.	Indian Ocean wave, stilt-house (rumoh Aceh) typology, disaster memory & resilience; communal rituals and preparedness.	Both encode cultural memory; JMB foregrounds historical trauma, ATM foregrounds natural-disaster memory and local resilience.
Key Attributes	Fracture, void, disorientation, oblique axes; sharp zinc-clad geometry; controlled light.	Undulating wave-like roof, porous/perforated screen, elevated plinth, choreography of darkness–sound–light.	Both extract salient traits of movement/rupture; different phenomenology (tectonic–fragmentary vs. fluid–topographic).
Domain-Transfer Strategy	Abstraction + fragmentation; deconstructive angles; diagonal voids cutting through mass; literal absence as concept.	Abstraction + reinterpretation; wave-form roof and perforated skin; vernacular re-coding of stilt logic.	Shared reliance on abstraction; strategy differs in formal syntax and cultural coding.
Spatial Narrative	Zigzag promenade along voids → confrontation & reflection; episodic galleries; moments of pause and shock.	Sequential ramps/galleries: constriction → darkness + water sound → emergence to light and openness.	Both stage emotional arcs; JMB intensifies rupture and loss; ATM choreographs catharsis and resilience.
Symbolic Legibility	High for informed audiences; requires curatorial framing; iconic in critical discourse.	High public readability (wave + rumoh Aceh cues); balanced education–memorial messaging.	Both legible; ATM is more immediately accessible to general publics; JMB invites deeper interpretive reading.

3.7 Data presentation

Results are communicated visually and narratively through:

- (i) Comparison tables (variable-wise mapping across precedents)
- (ii) Conceptual diagrams (source→attribute→transfer→form)
- (iii) Narrative schemata (spatial sequence), and
- (iv) Design visualizations for the applied synthesis.

3.8 Research timeline

The work spans six months: Months 1–2 literature & data, Month 3 individual analyses, Month 4 comparison & framework, Month 5 concept development for the museum, Month 6 reporting. (In thesis, this appears as a Gantt-style schedule).

Table 7. Research timeline (six-month schedule)

Month	Activities
1	Literature review; theoretical framing; initial precedent scanning
2	Finalize precedent selection; compile drawings/photos/texts; contextual data for Painan
3	Individual analyses (variables & indicators) for each precedent
4	Comparative mapping; synthesis into metaphor-design procedure
5	Application to Painan Maritime Museum concept; prepare visualizations
6	Write-up and refinement; tables/figures; editorial compliance to Sigma Teknika

4. RESULTS AND DISCUSSION

4.1 Site and context findings

The selected site at Carocok Beach, Painan sits within a strategic tourism node framed by Bukit Langkisau (west), the Indian Ocean (east), and regional approach routes from Pantai Salido (north) and southern Carocok access toward local piers—a geography that naturally stages a maritime narrative for the museum. The design situates the building as a cultural “gateway” within this landscape–city interface, using the ocean as the principal horizon and the hill as a vegetated buffer and visual counterpoint. These boundary conditions (west–east–north–south) are explicitly articulated in the thesis and motivate the seaward orientation and iconic public frontage of the museum.

The site size is 14,400 m² with a building footprint of 1,418 m², sunset views to the west, and a greened rear edge to the hill—features leveraged in later design moves (program stacking, viewing deck orientation, and shading).



Figure 5. Site Location: Carocok Beach

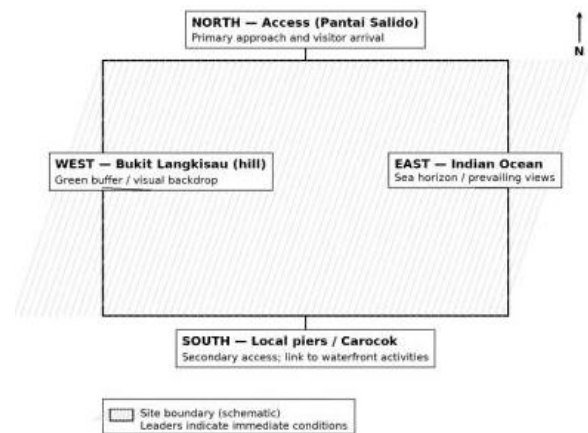


Figure 6. Site Boundaries Diagram

Table 8. Site analysis by variables

Variable	Indicator	Site analysis / design outcome
Metaphor Source	Source of metaphor	Local maritime memory & Pincalang typology framed by sea–hill–city axes (Carocok–Langkisau node)
Target Domain	Transferred to the site	Ship-like elongated mass oriented to the sea; plaza as urban ‘pier’; viewing deck toward horizon
Key Attributes	Salient traits from source	Prow orientation to the sea; coastal sunset view; vegetated hill as rear buffer

Consistent Attributes	Repeated/recognizable characters	Consistent elongated mass reading; robust sea-facing front; green edge to the hill
Domain-Transfer Strategy	Transformation method	Abstract ship form → site massing & orientation (departure metaphor); pedestrian links stitch city-sea
Relation of Source-Design	Legibility & context	Ship form & sea orientation are immediately readable as maritime symbols
Spatial Narrative	Order that forms a story	Embarkation (front plaza) → movement along the 'hull' → viewing deck → epilogue/open deck (return)

4.2 From analysis to metaphor-led design (synthesis)

The project translates local maritime sources—the *pincalang* boat, ocean waves, and fishing nets—into the museum's target domain: an elongated, prow-like mass, a wave-informed façade, and a net-pattern secondary skin for light filtering and symbolic legibility. This transfer preserves cultural meaning while avoiding literal mimicry, aligning with the five-variable framework established earlier.

Table 9. Conceptual principles of the metaphor-based design

Variable	Indicator	Site (Tapak)	Façade (Fasad)	Interior
Metaphor Source	Source of metaphor	Elongated mass oriented toward the sea (ship-like stance)	Pincalang-ship prow façade; undulating/wave façade; secondary skin with fishing-net motif	Hull-like spaces; atrium as spatial void; viewing deck framing horizon
Key Attributes	Salient traits from source	Prow-shaped orientation toward the sea	Successive wave pattern; repetitive net (pukat) pattern	Narrow 'hull' corridor; atrium; viewing deck as journey symbol
Consistent Attributes	Repeated/consistent characters	Consistently elongated mass resembling a ship ready to sail	Prow-like façade; curved wave forms for ancillary masses; net eyes on the secondary skin	Sequential rooms from dark→light →open that mirror a maritime journey
Domain-in-	How attributes	Abstraction of	Abstraction of	Narrow & dark corridor

Transfer Strategy	are transformed	ship form → mass oriented to sea (metaphor of "departure")	Pincalang → main façade; abstraction of wave → undulating façade; reinterpretation of net → shading/secondary skin	→ fear at sea; open & bright space → resolve/hope
Relation of Source-Design	Legibility to users	Ship form & sea orientation legible as maritime symbols	Ship-wave-net cues as local cultural signs	Journey reads as life-at-sea narrative
Spatial Narrative	Order that forms a story	Ship-like mass symbolizes embarkation	Façade as the 'skin' of the sea journey	Linear sequence: Lobby (pier) → Hull corridor → Exhibition/Education → Viewing deck → Epilogue (return)

4.3 Massing and façade outcomes

The main mass is conceived as a ship preparing to sail—a linear volume with a recognizable prow, oriented to the ocean to cue departure. A sequence of abstraction-reduction-symbolic transformation is documented in the design process, culminating in a façade composition that elevates the "sail" as a vertical plane and the "hull" as the guiding volume.

Façade operations combine wave-like profiles and jala-pattern screening, producing dynamic shadows and a rhythm that reads as maritime motion while improving daylight control—an explicit example of domain-transfer strategy serving both performance and meaning.

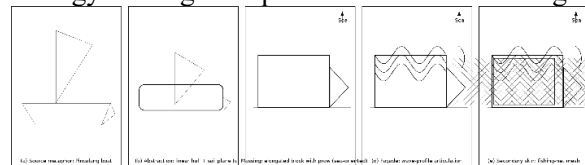


Figure 7. Main Building Mass / Transformation Sketch

Table 10. Mass & façade analysis by variables

Variable	Indicator	Design outcome (Mass & Façade)
Metaphor Source	Source of metaphor	Pincalang boat; Indian Ocean waves; fishermen's net → drive the mass-and-skin language
Target Domain	Where the metaphor is transferred	Pincalang-shaped façade and prow; undulating wave façade; secondary skin with net motif (filtering light)
Key Attributes	Salient traits / patterns	Successive wave rhythms; repetitive net mesh; ship prow emphasis at public front
Consistent Attributes	Repeated/recognizable characters	Elongated, sailing-ready mass; continuous undulating profiles; readable net mesh
Domain-Transfer Strategy	Transformation method	Abstraction of ship into linear mass; abstraction of wave into undulating façade; reinterpretation of net as shading device
Relation of Source-Design	Legibility & context	Ship-wave-net directly legible as maritime/local culture cues
Spatial Narrative	Story embodied in mass & skin	Façade operates as a narrative skin of a sea voyage; mass as symbol of embarkation

4.4 Spatial narrative and circulation

The museum's circulation is the key narrative device, organized as a linear-sequential journey from embarkation (lobby), through constriction/tension (hull-like galleries), to climax (main exhibition), followed by reflection (café & viewing deck) and an epilogue (open deck, descent to city). Principles emphasized include atmospheric sequencing (light/scale/material) and visual anchoring to sea and hill, so that movement doubles as symbolic interpretation.

Each stage is given a phenomenological role: narrowing corridors induce tension, the main hall opens to dramatic light filtered through the net-skin, and the outward turn to the deck offers a calm horizon, before a downward homecoming. This arc-departure → uncertainty → intensity → reflection → return—aligns the museum's choreography with a maritime life-cycle.

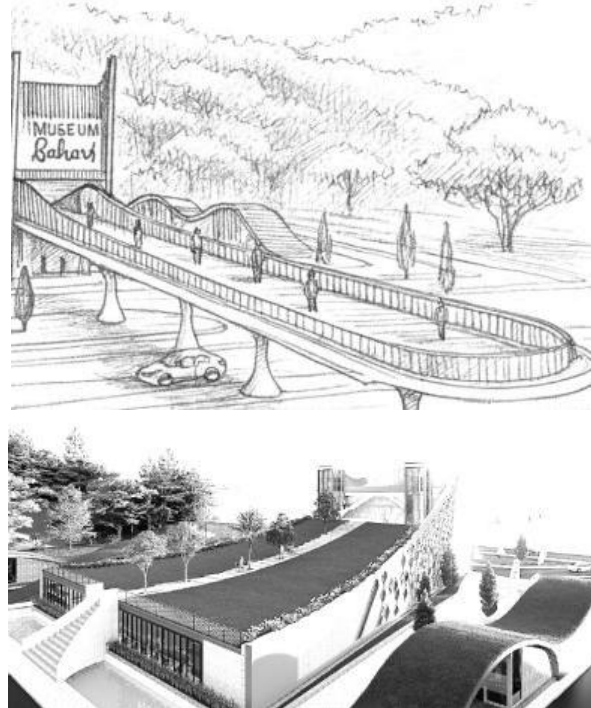


Figure 8. Viewing Deck & Epilogue Path

4.5 Interior experience (metaphor integration)

The interior integrates three explicit metaphors: pincalang (transitional and thematic spaces shaped like a hull), waves (undulating ceilings/floors and dynamic roof profiles), and fishing nets (secondary skin casting rhythmic shadows). The thesis describes anticipated emotional cues—from preparedness and tension to hope and release—mapped to spatial transitions and light conditions.

4.6 Outdoor spaces and environmental integration

External works extend the metaphor: a sand-like landscaped roof symbolizes the shoreline while adding ecological benefits (thermal mitigation, water infiltration), and a festival plaza operates as the city-scale “deck” binding museum education with civic life. The site planning strengthens three relationships—to the sea (orientation/viewing deck), to the hill (rear access/visual balance), and to the city (front plaza as cultural gateway)—so the museum reads not as an isolated object but as landscape narrative.

4.7 Program and spatial performance

The programmed experience stacks three levels to support the narrative: a public-educational ground floor (lobby, initial/thematic galleries, interactive room, aquarium, cinema,

main exhibition, café), an upperlevel emphasizing viewing deck and epilogue, and a third-level exit maintaining visual continuity. Representative area data-e.g., Main Exhibition: 360 m² visitors + 144 m² display ($\approx$ 504 m²); Viewing Deck: 360 m²; Café: 150 m²-demonstrate capacity alignment with the circulation concept and horizon-oriented pauses.

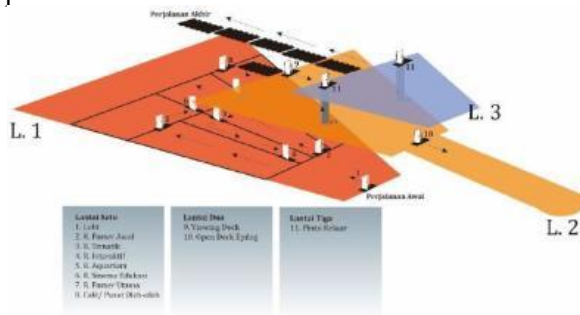


Figure 9. Circulation Narrative Diagram

Table 11. Program areas

Group	Space	Capacity (people)	Area per person (incl. GF) [m ²]	Total area [m ²]
Public & Transition	Lobby & ticketing	100	1.9	190
	Display area (15%)			28.5
	Ticketing counter			20
	Information desk			25
—	Subtotal Public & Transition			263.5
Initial Exhibition	Visitor area	30	2.7	81
	Display (15%)			16.2
—	Subtotal Initial Exhibition			97.2
Thematic	Thematic corridor	30	1.2	36
	Interactive corridor	30	1.2	36
	Interactive & video area			45
—	Subtotal Thematic			81
Education	Aquarium – visitor area	30	2.7	81
	Aquarium – tank area (25%)			20.25
	Educational cinema – audience	40	1.2	48
	Screen & viewing			30

	distance (~5 m)			
Main Exhibition	Visitor area	120	3.0	360
	Display (40%)			144
—	Subtotal Main Exhibition (thesis line)			683.25
Recreation & Reflection	Café	100	1.5	150
	Viewing deck	120	3.0	360
—	Subtotal Recreation & Reflection			510

4.8 Symbolic legibility (evaluation)

The design aims at a dual-layer legibility: an immediate, popular layer (recognizable ship-wave-net cues) and a deeper philosophical layer (fishermen's life journey, the ambivalence of the sea, the metaphor of return). The thesis concludes that this balance links individual visitor experience with collective memory, yielding a communicative yet reflective museum identity that is locally rooted and widely readable.

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

This research shows that a five-variable metaphor framework-metaphor source, key attributes, domain-transfer strategy, spatial narrative, and symbolic legibility-successfully bridges maritime culture and place into architectural form and experience. In the Painan Maritime Museum proposal, the Indian Ocean, the pincalang boat, and fishing nets are abstracted and transferred across site, massing, façade, and interior, choreographing a visitor journey from “hull-like” constriction to an open viewing deck aimed at the sea (departure → reflection → return). The design aspires to function not only as a tourism–education facility but as an architectural icon that connects local maritime identity, history, and emotion-echoing memorialization lessons from the two precedents (remembering the past, celebrating identity, cultivating future awareness).

Moreover, the intended reading operates in two layers-popular (immediately recognized symbols of ship-wave-net) and philosophical (fishermen's life, the sea's ambivalence, return)-balancing communicative clarity with reflective depth. This positions the museum as a narrative

medium that links individual experience and collective memory in Painan.

5.2 Recommendations for Future Research

Grounded in the study and design outcomes, the thesis formulates three clusters of recommendations:

1. For design and implementation.

- ✓ Conduct a detailed technical study of the net-pattern secondary skin so that metaphorical expression aligns with structural efficiency and long-term maintenance.
- ✓ Validate circulation and storytelling with visitor-experience simulation to ensure the metaphor is legible along the entire route.

2. For area (district) development.

- ✓ Integrate the museum more tightly with nearby attractions-Pulau Cingkuak, Bukit Langkisau, and the Floating Mosque-via pedestrian links, a tourist jetty, and educational packages.
- ✓ Shape the landscape under eco-cultural tourism principles, combining marine ecology education with local fishing culture.

3. For academia and future research.

- ✓ Empirically measure symbolic legibility via post-occupancy perception surveys of residents and tourists.
- ✓ Conduct comparative studies with maritime museums abroad to enrich global perspective and strengthen Painan's coastal-architecture positioning.
- ✓ Explore interactive digital media (AR/VR) to deepen narrative immersion in line with contemporary museology.

Table 12. Summary of recommendations for the Painan Maritime Museum

Cluster	Action item	Rationale	Expected outcome
Design & implementation	Technical study of net-pattern secondary skin	Align metaphor with structure & maintenance	Durable, efficient, legible façade
	Visitor-experience simulation of circulation	Validate narrative legibility	Clear story arc along the route
Area development	Integrate with Cingkuak–Langkisau–Floating Mosque via	Build district-scale synergy	Stronger visitation & learning network

	walks/jetty/packages		
	Eco-cultural landscape programming	Couple ecology & culture	Place-based education outdoors
Academia & future research	Post-occupancy perception surveys	Empirically test symbolic legibility	Evidence-backed refinement
	Comparative studies with maritime museums abroad	Global benchmarking	Stronger coastal-architecture positioning
	AR/VR narrative layers	Deepen immersion	Contemporary, engaging museology

5.3 Architectural Design Recommendations for the Painan Maritime Museum

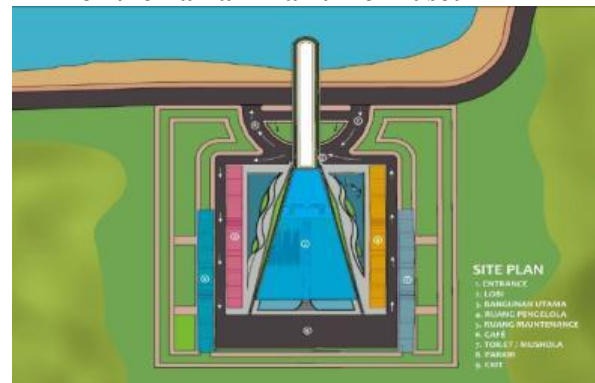


Figure 10. Siteplan dan Zoning

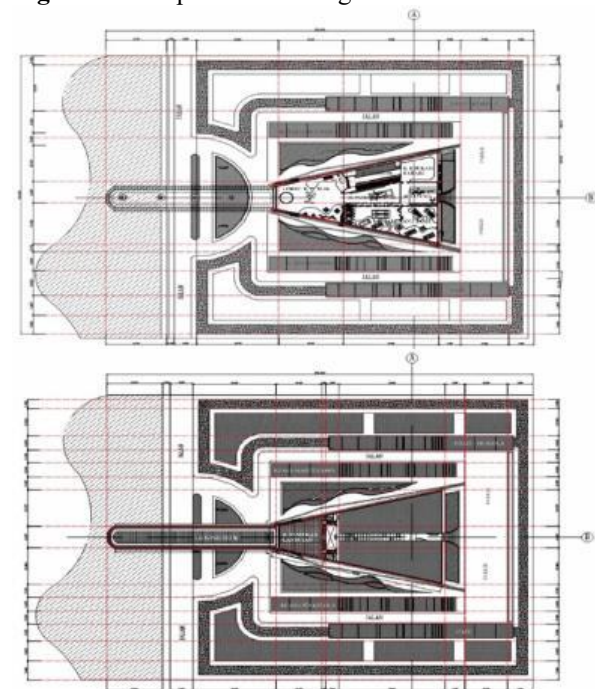


Figure 11. First Floor & Second Floor Plan

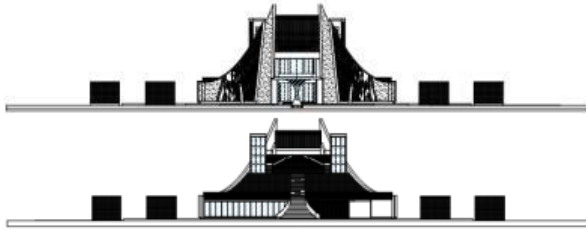


Figure 12. Front & Rear Elevation of the Building

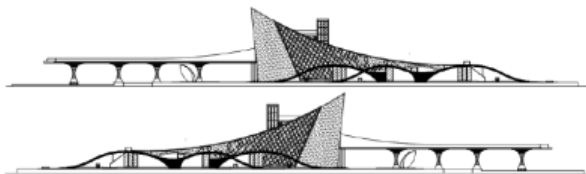


Figure 13. Right-Left Side Elevation of the Building

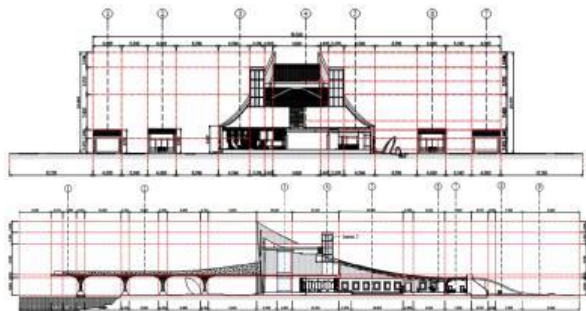


Figure 14. Section A-A & B-B of the Building



Figure 15. Interior Perspective of the Lobby



Figure 16. Initial Exhibition Room



Figure 17. Hull Exhibition Room



Figure 18. Thematic Exhibition Room

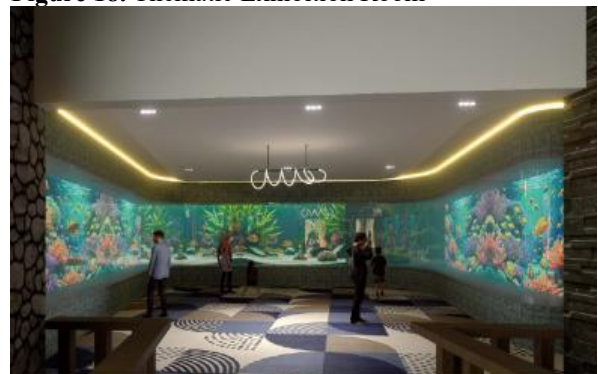


Figure 19. Maritime Education Gallery



Figure 20. Cinema Room



Figure 21. Main Exhibition Room



Figure 22. Main Exhibition Room



Figure 23. Contemplation Room

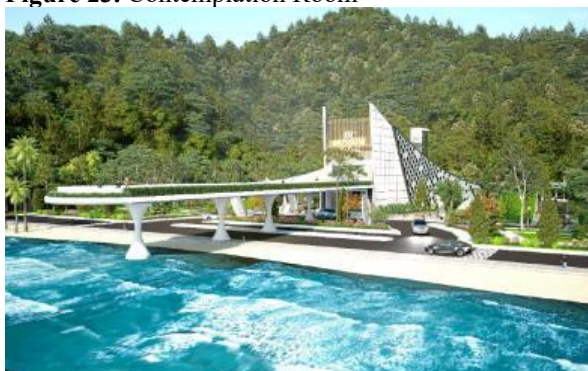


Figure 24. Viewing Deck



Figure 25. Open Deck Epilog





Figure 26. View Eksterior



Figure 27. View Eksterior Auxiliary Building

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