

From Precedent to Proposal: A Design-Led Framework for manifesting Natural Elements in the Contemporary Bungalow Interiors of Ahmedabad

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Abstract

The modern bungalow design in Ahmedabad has developed more complex in layout and richer in materials and execution, but a connection with natural elements like light, air, water, earth, and life inside the home. This paper argues that integration and bringing these elements back isn't just about looks or being Sustainable or Modern, but it's a core part of good interior design, especially in Ahmedabad's hot, dry climate.

Looking back at the city's modernist roots, architects like B.V. Doshi, Charles Correa, and Hasmukh Patel (HCP) used natural elements as a center and key design tools. By studying and analysing their work alongside today's contemporary practices, this research finds both rooted strategies and missed opportunities. The result is a simple, hands-on framework with five ideas: Light as Choreography, Air as Section, Water as Event, Earth as Palimpsest, and Life as Co-inhabitant. This framework is meant to guide both the author's design thesis and broader interior design work in climate-responsive urban homes.

Keywords: Natural elements, interior architecture, Ahmedabad, residential bungalow typology, design led research, climate responsive design.

1. Introduction

1.1 Background and Context

Ahmedabad is located in western India's Gujarat, with a hot, semi-arid climate and a strong historical and modernist architectural history. In the mid-1900s, Ahmedabad School of architecture took shape, led by Ar. B.V. Doshi, Ar. Charles Correa, and Ar. Hasmukh Patel. Working on the foot-steps of Le Corbusier and Louis Kahn, they created a regional modernism that truly responded to local conditions. Their homes like Doshi's own studio-residence, Correa's heritage centre, and H Patel's many bungalows and design Displays a smart mix of natural elements. Light Dramafiltered through brick jalis, breezes guided by building shape and form, and courtyards that create micro-climate with cooled things down were not extras. They were the starting points for design.

But today's designed bungalows in Ahmedabad have changed. With new Ideas and aspirations, Increase in land prices, and a glassed look, Most of new Buglows go for Huge size, sealed AC interiors, and luxury materials from Internation markets. The careful environmental thinking of the past has often been pushed

aside. The interior, once was open and responsive to the Courtyard and Open Spaces, is now often a Closed, climate Monitored controlled box.

1.2 Problem Statement

There's a clear gap between the climate-smart interiors of Ahmedabad's modernist homes and the ambitious but often disconnected interiors of today's bungalows. Even though people talk more about sustainability, it usually stays at the level of add-ons—solar panels, double glazing—rather than rethinking how natural elements can actually shape a room's experience.

1.3 Research Questions

1. How did Ahmedabad's modernist architects use natural elements as design tools inside Residential Spaces?
2. What patterns, principles, and spatial ideas come out of studying these older buildings?
3. What Teachings be turned into a design-led framework for today's Residential interiors in Ahmedabad?

1.4 Aim and Objectives

The aim is to create a design led framework to integrate natural elements into contemporary bungalow interiors in Ahmedabad. The steps are:

- Study and analyze at key older/Historical residential interiors where natural elements played a role.
- Spot and group the recurring strategies used.
- Summarise everything together into a clear, applicable and usable framework for designers.

1.5 Methodology: Design-Led Research

This study uses a design-led research approach, where design practice itself is the method of inquiry, not just the end result (Frayling, 1993; Downton, 2003). It has three phases:

- **Precedent Analysis:** Identifying and choosing selected Ahmedabad homes, focusing on how natural elements dives into space, materials, and User experience.
- **Framework Development:** Turning what's learned into a well structured framework a design tool in its own language.
- **Design Application:** Testing and refining the framework on a real residential bungalow and site, which becomes the author's design thesis.

The paper isn't just academic it's a study and groundwork for something built.

2. The Theoretical Ground: Understanding Manifestation and Potential

2.1 Defining Manifestation

Why “manifestation” instead of “integration” or “incorporation”?

Because manifestation means making natural elements visible, readable, and present in a space. It's about translating nature's Movement and actions, sun movement, Wind Direction, rain Impact into architectural language: space, material, light, sound, texture.

2.2 The Specificity of Ahmedabad's Climate

Ahmedabad has a hot, semi-arid climate.

- Intense and Extreme heat and solar radiation, especially in summer (April–June), with temperatures hitting 45°C.
- Clear seasons: hot dry, monsoon (July–September) and mild winter.
- Southwest winds during monsoon and northerly winds in winter.

Rather than Understanding this conditions as problems to be solved by machines, this research look at

them as things to work with and design for.

3. Precedent Case Study Analysis: Natural Elements in Ahmedabad's Modernist Residential Interiors

3.1 Case Study 1: Sangath - B.V. Doshi Studio Residence (1980)

Though mainly a studio, Sangath shows ideas Doshi used in homes as well.

Partially Underground, with vaulted forms rising from the earth.

- **Earth as Thermal Mass:** The partly underground construction keeps temperatures maintained as earth as a climate tool, not just merely a foundation.
- **Light as Choreography:** Light enters where vaults and meet through carefully and statically placed openings, creating a changing and shifting interior. The light shifts with seasons and time, making the day readable inside, with light drama.
- **Water as Microclimate:** A shallow pool at the entrance cools incoming air through evaporation, working both practically and experientially through sight and sound.

What this teaches the framework:

Sangath Studio shows how sectional design can bring natural elements together and integrate in to each other. Earth for thermal stability, light for Drama, water for microclimate.

3.2 Case Study 2: Gandhi Ashram - Civic Architecture (1976)

Not a residence (to understand the blend), but Charles Correa's Gandhi Ashram has spatial ideas that work well in residential bungalows. His residential work in Ahmedabad, including the Gandhi Smarak Sangrahalaya,:

- **The Courtyard as Organizer:** Ar. Charles Correa called the courtyard "the great open-to-sky room." In his homes, courtyards are active spaces around which rooms are placed and arranged. They invite in sky light, air, rain as the home's focal point.
- **Venturi Effect and Air Movement:** Correa used level changes to channel wind, creating pressure differences that move air without fans.

What this teaches the framework: Ar. Charles Correa's work establishes the courtyard as a framework for manifesting natural elements, and his sectional ideas and show how airflow can be designed, not just allowed.

3.3 Case Study 3: Ar. Hasmukh Patel's Private Residences (1960s–1980s)

Ar. Hasmukh Patel, a prolific Ahmedabad architect, designed many Residential bungalows that integrated natural elements with real skill. Common strategies:

- **Brick Jaali as Filter:** Ar. Hasmukh Patel used perforated brick screens or jali not as decoration but as careful filters for light and air, creating buffer. The perforated pattern, thickness, and orientation responded to sun and wind, allowing controlled inlay of light.
- **Transitional Spaces:** His bungalows often have verandahs, semi-enclosed/semi-open terraces, and deep balconies zones that mediate the climate, letting people experience the space while staying protected.
- **Material as Expression:** Exposed brick, Timber and stone are not just for Aesthetic, they age and change with weather, making time visible inside.

3.4 Synthesis of Precedent Findings

With Studying these examples, some recurring strategies and spatial types stand out:

Table 1: Element study

Element	How it’s manifested	Spatial or experiential result
Light	Jaali, shading, vaults double height	Spatial interior, Changing mood
Air	Level changes, venturi, courtyard	Comfort, Natural cooling
Water	Courtyard pool, evaporative surfaces	Cooler microclimate, sound
Earth	Thermal mass, underground spaces	Stable temperature, tactile feel
Life	Courtyard garden, framed views	Connection to nature, seasonal change

4. Contemporary Practice: Gaps and Opportunities

A look at new Residential bungalows in Ahmedabad’s shows some big shifts from the older work.

4.1 Observed Trends

- **Heavy reliance on machines:** Extensively AC use has reduced the need for passive design. Many new homes depend entirely on mechanical systems, so the inside no longer responds to the outside.
- **Glass everywhere:** Large, unbroken and seamless glass facades often inspired from cooler climates dominate. Without shading, they let in too much heat and offer no control over light intensity or views.
- **Same materials everywhere:** Imported orders marble, synthetic same finishes, and Pre-fab factory-made products have replaced local, responsive materials.
- **Courtyards sidelined:** Where courtyards still exist, they’re often just tiny light wells, not real spatial organizers.

4.2 Emerging Opportunities

- **Growing environmental awareness:** Clients and architects discuss about nature and sustainability, even if mostly heavily tech-focused. That shows openness.
- **Craft revival:** Interest in traditional local crafts and materials like brick, making a comeback.

5. A Design-Led Framework for Manifestation

Based on the theory, study, and current practices, here is a proposed framework.

It has five categories, each focuses on one natural element with practical design strategies for contemporary Residential bungalow interiors.

5.1 Light as Choreography

Table 2: Light as Choreography study

Strategy	Meaning	Implementation
Temporal Mapping	Openings sized for specific times of day	Morning light in bedrooms, evening light in living areas
Filtered Penetration	Layered surfaces that soften and colour light	Modern jaali, fabric screens, perforated metal
Reflected Light	Surfaces that bounce light deeper inside	Polished floors, Minimal ceilings, angled reveals

Shadow as Form	Intentional shadow from overlapping shapes	Layered ceilings, projecting elements
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5.2 Life as Co-inhabitant

Table 3: Light as Co-Inhabitant study

Strategy	Meaning	Implementation
Inhabited Planters	Planters built into usable surfaces	Planting that also works as seating, room dividers, or edges
Framed Views	Openings that frame living landscapes	Small window views to gardens, tree lines
Seasonal Change	Design that welcomes seasonal shifts	Deciduous plants for summer shade and winter sun, seasonal flowers
Fauna Accommodation	Inviting birds, butterflies, insects	Pause spots, pollinator-friendly planting

Conclusion

This paper has tried to show that today’s Ahmedabad Residential bungalow interiors can learn a lot from the city’s modernist past.

By studying Ar. B.V Doshi, Ar. Charls Correa, and Ar. Hasmukh Patel, we identified varied ways of working with light, air, water, earth, and life. These strategies, rooted in real climate and lived experience, were Put together into a Two-part framework.

The framework Light as Choreography, Air as Section, , Earth as Palimpsest, and Life as Co-inhabitant offers a new flexible guide for today’s Interior designers. It states that working with natural elements isn’t a style choice. It’s a rotted part of interior architecture, shaping not just how a home performs environmentally, but how it makes an individual feel, how it changes and adapt through the day and multiple seasons, and how it’s lived in.

Moving from precedent to proposal, from analysis to framework to design application, defines this research’s approach. A design focused method, grounded in Ahmedabad’s specific climate and architecture, can produce a framework that’s both deeply rooted in history and useful in contemporary times bridging the Nature wisdom of the past with the needs of contemporary practice.

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