

# 'The Psychology of Space: Emotional Responses to Form and Light in Chapels'

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**Abstract** - This dissertation seeks to explore the relationship between the colonial architectural spaces and the modern-day inhabitant of the city of Bangalore, India, through a critical analysis of the architectural and experiential relationship between the colonial spaces of St. Mark's Cathedral and CSI Holy Trinity Church, and the modern-day inhabitant of the city of Bangalore.

## Design Brief

The primary objective of the project was to assess the "performance of peace" within the spaces of St. Mark's Cathedral and CSI Holy Trinity Church, by understanding the manner in which the transition from the chaotic spaces of MG Road and Trinity Circle, the "sacred silence" of the spaces of St. Mark's Cathedral and CSI Holy Trinity Church, was enabled through the use of specific architectural features such as the Romanesque dome of St. Mark's Cathedral and the Gothic wooden trusses of CSI Holy Trinity Church.

## Methodology

The methods and procedures adopted for the project were qualitative, wherein the spaces of St. Mark's Cathedral and CSI Holy Trinity Church were compared through a series of semi-structured interviews conducted with a range of respondents, including a Civil Engineer, a Priest, a Cleaner, and an IT Worker, alongside comparative environmental data such as thermal mass, light penetration (lux), and acoustic decay (RT60) being simulated for the spaces of St. Mark's Cathedral and CSI Holy Trinity Church.

The design process used these findings to create a "Sensory Heat Map" of the sites. This entailed breaking down the buildings to their fundamental components of sensory catalysts, such as how a three-foot thick granite wall provides a thermal shield and how vertical volumes affect the scale and emotion of humans. This study also analyzes the Processional Path from the street gate to the altar to understand the shift in emotion from anxiety to understanding.

The final design of this research concludes that the effectiveness of these colonial-era churches is rooted in their "Biophilic Shielding." This study suggests that contemporary urban architecture can learn from these traditional typologies and use them to create a more mentally healthful environment through the use of thermal mass and acoustic isolation. These findings suggest that the preservation of these sites is not merely a nostalgic exercise but a requirement for psychological sustainability in a burgeoning metropolis.

**Keywords:** Phenomenology, Colonial Architecture, St. Mark's Cathedral, Holy Trinity, Sensory Sanctuary, Bangalore Urbanism.

## 1. INTRODUCTION

Architecture can change how people feel and act by using space, scale, and light. Sacred architecture is made to do more than just provide a place to worship; it is also meant to create spiritual and emotional experiences. Scholars like Norberg-Schulz (1980) say that the way buildings are built affects how people see things and gives them a sense of meaning and belonging. In the same way, Pallasmaa (2012) says that light, materials, and the size of spaces have a big impact on how we feel and what we sense.

Baroque church architecture is recognised for how it uses light and shape in a dramatic way. Baroque architecture, which started in Europe in the 17th century, used verticality, axial symmetry, and controlled lighting to create awe and strong emotions (Blunt, 1978). When this style was brought to places like India that were still colonies, it had to change because of the environment, the materials that were available, and the culture of the area. However, the main ideas of spatial drama and symbolic light were often kept.

This study examines the impact of spatial form and natural light on emotional responses in colonial Baroque churches in Bengaluru

## 1.1 Context of the Research

The study is situated in Bengaluru, Karnataka, within colonial-era ecclesiastical architecture. The research examines two significant churches:

- St. Mark's Cathedral
- Holy Trinity Church

These structures reflect adaptations of English Baroque architectural principles within a tropical climate. Geographically, Bengaluru's moderate climate allows substantial daylight penetration. Culturally, these churches represent colonial-era Anglican traditions embedded within Indian urban fabric. Typologically, both buildings function as sacred congregational spaces emphasizing axiality, verticality, and altar hierarchy.

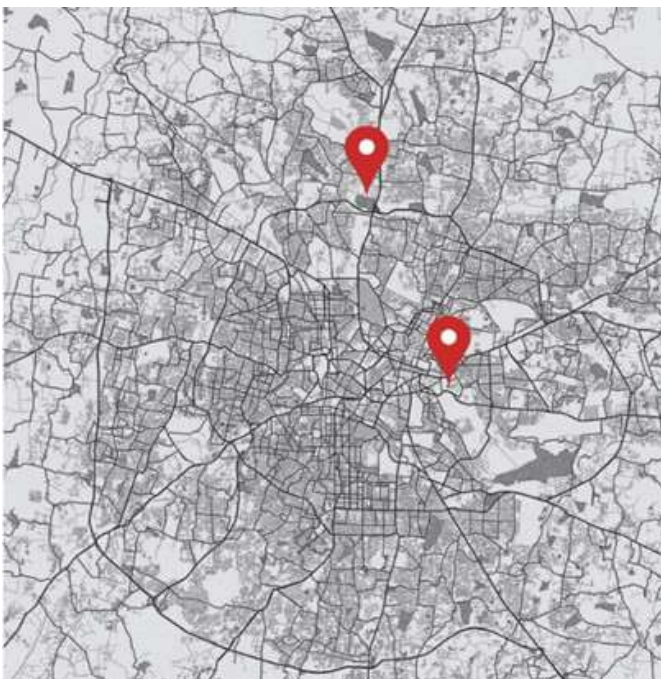


Fig -1: Location of selected case studies in Bengaluru.

## 1.2. Rationale and Need for the Study

Although Baroque architecture has been widely studied from historical and stylistic perspectives (Blunt, 1978; Wittkower, 1999), there remains a significant research gap in understanding its psychological and emotional impact, particularly in colonial adaptations. Much of the existing scholarship concentrates on formal composition, ornamentation, and structural analysis rather than on

experiential and perceptual dimensions of space (Norberg-Schulz, 1980; Summerson, 1963).

This research addresses the absence of qualitative, emotion-based spatial analysis in colonial ecclesiastical contexts and contributes toward a more experiential understanding of sacred architectural environments (King, 1976; Metcalf, 1989).



Fig -1.2: Exterior element.

## 1.3. Research Problem Statement

How do spatial form and light in English Baroque colonial chapels influence emotional and contemplative experiences of users within a tropical and culturally hybrid context?

## 1.4. Aim of the Research

To investigate the role of spatial form and natural light in shaping emotional responses and contemplative experiences in English Baroque colonial chapel architecture.

## 1.5. Objectives of the Research

- To analyse how spatial geometry (symmetry, axiality, and verticality) affects user perception.
- To study the quality, intensity, and direction of natural light within chapel interiors.
- To identify architectural elements that contribute to feelings of awe, serenity, and sacredness.

- To compare emotional responses between selected case studies.
- To develop a qualitative framework linking b v -spatial elements with psychological outcomes.

## 1.6. Research Questions

1. How does spatial symmetry and proportion influence emotional stability in sacred spaces?
2. Does verticality contribute to feelings of awe and transcendence?
3. How does the direction and intensity of natural light affect contemplative experience?
4. What differences in emotional perception emerge between the selected case studies?

## 1.7. Research Questions

The study adopts qualitative methods to evaluate user perception, including site observation, spatial analysis, and semi-structured interviews. Emotional responses such as calmness, awe, reverence, and transcendence are documented and thematically analyzed to establish correlations between architectural elements and experiential outcomes.

## 1.8. Limitations of the Study

- The study relies primarily on qualitative interpretation and participant responses.
- Emotional perception is subjective and may vary across individuals.
- The research is geographically limited to Bengaluru.
- Historical archival data availability may be restricted.

## 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

The literature review provides a conceptual framework to analyze the selected case studies and to identify gaps in the existing literature.

### 2.1. Historical Evolution of Baroque Ecclesiastical Architecture

Baroque architecture, which started in Europe in the 17th century, is an artistic and emotional response to the changes that the Counter-Reformation brought about. During this time, church architecture focused on dramatic expression and spiritual engagement by using the following features:

- Massiveness
- Axial symmetry
- Spatial movement
- Strong contrasts of light and dark (chiaroscuro)

English Baroque architecture had clear geometric shapes, domes, and controlled lighting strategies to bring out spirituality and divine images, even though it was less ornate than Italian Baroque architecture.

### 2.2. Theoretical Foundations

Phenomenology studies how space is experienced through the senses and how individuals perceive meaning through their interaction with the built environment. Sacred architecture operates not merely as a physical structure but as an atmospheric setting that shapes emotional and spiritual awareness (Norberg-Schulz, 1980). According to phenomenological theory, space influences feelings through scale, proportion, enclosure, light, and material presence. In religious buildings, elements such as vertical height, filtered daylight, and spatial symmetry contribute to a sense of sacredness and transcendence. Norberg-Schulz (1980) argues that architecture creates a “sense of place” by organizing space in a way that allows users to feel oriented and spiritually connected. Therefore, chapel interiors are experienced not only visually but emotionally and sensorially, where atmosphere becomes central to understanding the psychological impact of space.

Key ideas include:

- Space as lived experience
- Emotional memory triggered by form
- Light as symbolic presence

Church interiors often use height, enclosure, and filtered light to shape contemplative awareness.

### 2.3 Atmospheric Architecture

The concept of “atmosphere” in architecture refers to the overall mood or emotional quality that a space generates through its physical and sensory characteristics. It suggests that architectural design does not merely define form and function, but also shapes how a space is felt and experienced. Atmosphere emerges from the interaction of multiple spatial elements working together cohesively.

Key components contributing to atmosphere include:

**Light intensity:** The quality, direction, and brightness of light influence perception, focus, and emotional tone. Soft, diffused light can create calmness, while dramatic contrasts may evoke awe or reverence.

**Material texture:** Surfaces such as stone, wood, plaster, or glass affect tactile and visual perception, contributing to warmth, solidity, or monumentality.

**Spatial proportion:** The relationship between height, width, and depth determines whether a space feels intimate, balanced, or grand.

**Shadow contrast:** The interplay of light and darkness introduces depth, mystery, and spiritual symbolism.

Theory / Approach	Key Author	Core Concept	Relevance to Study
Phenomenology	Christian Norberg-Schulz	Space as lived experience	Explains emotional perception in chapels

Atmospheric Architecture	Peter Zumthor	Mood created by light and material	Connects architecture to psychological response
Sensory Architecture	Juhani Pallasmaa	Multi-sensory spatial experience	Supports emotional analysis framework
Environmental Psychology	Amos Rapoport	Built environment affects behavior	Links spatial form to emotional reaction

Table -1: Summary of Theoretical Foundations

### 2.4 Light as a Psychological Instrument

Church lighting does not merely illuminate the area but also establishes the mood and navigates the soul. On a physical note, natural lighting ensures that the large spaces within the church are easily readable, thus enabling the activities that take place within the area. The placement of the clerestory windows, stained glass, and large openings ensures that the lighting is evenly distributed, glare is reduced, and the details of the architecture are visible.

Church lighting, however, is not merely physical but is also symbolic, representing concepts such as the divine, purity, hope, and revelation, to name a few. The lighting that bathes the altar with brightness underscores its significance and the hierarchical nature within the church. The lighting that enters the area from above evokes the concept of transcendence and connection to the heavens above. The difference between the bright points and the less bright points creates a sense of reverence and introspection.

Church lighting, therefore, is not merely a physical need but a powerful design element that influences the mood, the emotions, and the spirituality of all who find themselves within the sacred spaces.

## 2.5 Review of Empirical Studies

### Spatial Compression and Expansion in Baroque Churches

European studies emphasize the use of dramatic spatial compression and expansion in Baroque churches as a key device to heighten the religious and emotional experience (Wittkower, 1999). The deliberate manipulation of spatial sequences, from entrance to altar, transforms movement through the building into a psychological journey, wherein each spatial encounter contributes to an evolving emotional state. The design of these spaces ensures that architecture itself becomes a medium for spiritual engagement.

Many Baroque churches incorporate narrow entrance zones, vestibules, or low-ceilinged corridors that serve as transitional thresholds. Upon entering these confined spaces, visitors experience a sense of enclosure and anticipation. This tension is intentionally contrasted with the sudden opening into a vast, vertically oriented nave, which often features soaring ceilings, expansive arches, and strategically illuminated focal points. The transition from compression to expansion creates a perceptual contrast that heightens the visitor's awareness of spatial dimensions and evokes an emotional response of release and elevation.

## 2.6. Conceptual

The analytical framework adopted in this study establishes a structured relationship between architectural inputs, contextual processes, and psychological outputs. It provides a lens through which the complex interplay of form, environment, and human perception can be systematically examined, particularly in the context of colonial sacred architecture.

At the foundational level, architectural inputs comprise spatial geometry, light quality, and material texture—three critical dimensions that directly shape how a sacred space is perceived and experienced. Spatial geometry encompasses plan configuration, axial alignment, proportion, verticality, and volumetric relationships. These elements structure movement, guide visual focus, and create a hierarchy of spaces that influence the cognitive and emotional journey of the visitor. For instance, axial progression directs attention toward the altar, while volumetric contrast between

enclosed vestibules and expansive naves orchestrates a sense of anticipation and release.

## 2.7. Summary and Inferences from Literature Review

The literature on sacred architecture provides a robust conceptual framework for understanding built spaces as emotionally responsive and perceptually charged environments. Across architectural theory, scholars emphasize that architecture is not a passive backdrop for human activity but an active mediator of experience.

In ecclesiastical contexts, where architecture directly interfaces with ritual and devotion, this relationship between spatial form and human emotion is particularly pronounced.

## 3. LIRESEARCH METHODOLOGY

This chapter discuss the methodological framework adopted to investigate the influence of spatial geometry and natural light in emotional perception in colonial baroque chapels. To this end, the methodological framework adopted in this study draws from architectural analysis and qualitative experiential interpretation in an attempt to establish a linkage between the built form and psychological response (Norberg-Schulz, 1980; Pallasmaa, 2005).

### 3.1. Research Philosophy and Approach

Given that this study focuses on human experience and the meaning associated with sacred space, it adopts an Interpretivist Research Paradigm (Schwandt, 1994).

Interpretivism posits that reality is not fixed or universally measurable but is constructed through

individual perception, cultural context, and social interaction. In the context of sacred architecture, each person's encounter with a space is unique, influenced by prior experiences, cultural understanding, and personal sensibilities. Consequently, understanding sacred architecture requires an approach that emphasizes subjective interpretation and experiential insight, rather than relying solely on quantitative metrics.

Component	Description	Theoretical Support
Research Paradigm	Interpretivist	Reality is socially constructed and experience-based
Research Approach	Qualitative	Suitable for subjective emotional inquiry
Methodological Lens	Phenomenology	Focus on lived spatial experience
Strategy	Multiple Case Study	Contextual depth and comparative insight

Table -2: Research Philosophy

### 3.3 Research Design and Strategy

The research design adopted for this study integrates a **multiple case study strategy**, a **descriptive and analytical approach**, and **phenomenological inquiry** to achieve a comprehensive understanding of sacred spatial experience. This integrative design ensures that the study captures both the **physical attributes of architecture** and the **subjective, emotional responses** of users, allowing a nuanced exploration of how built form mediates spiritual and psychological experience.

#### Integration and Significance:

By combining multiple case study analysis, descriptive-analytical documentation, and phenomenological insight, the research design provides a **holistic framework** for understanding sacred spatial experience. It bridges the tangible and intangible aspects of architecture, connecting **form, light, and materiality with human perception and emotion**. This integrated design ensures that the study not only identifies **architectural patterns and principles** but also elucidates how these features actively **shape emotional and spiritual engagement** within colonial chapels in Bengaluru. The approach is particularly effective for sacred spaces, where **experience, atmosphere, and psychological impact are as critical as structural or stylistic considerations**, allowing for a comprehensive

exploration of the intersection between architecture and human consciousness.

### 3.4. Selection of Study Area and Case Studies

Criteria	Description	Relevance to Study
Architectural Style	English Baroque influence	Ensures stylistic consistency
Spatial Geometry	Axial layout and symmetry	Influences emotional sequencing
Vertical Emphasis	High ceiling / vault	Linked to awe perception
Lighting Strategy	Natural daylight penetration	Impacts spiritual atmosphere
Accessibility	Public access permitted	Enables observation & interviews

Table -3: Criteria for Case Study Selection

### 3.4. Description of Study Context

This study focuses on two significant colonial churches in Bengaluru: St. Mark's Cathedral and Holy Trinity Church. Both structures are exemplary representations of English ecclesiastical architecture introduced during the British colonial period, subsequently adapted to the climatic, material, and cultural context of South India. Constructed in the nineteenth century, these churches embody the spatial order, axial planning, and proportional discipline characteristic of English Baroque and Neo-Classical traditions, while simultaneously demonstrating the nuanced modifications required for tropical environments (Metcalf, 1989).

### 3.5 Summary of Methodological Framework

Ethical considerations were a central concern throughout the research process, ensuring that the study was conducted with respect for participants, transparency in methodology, and adherence to the highest standards of academic integrity. Recognizing the sensitivity of working within active sacred spaces, the research design incorporated multiple safeguards to protect both human subjects and the spiritual environment. Prior to initiating any fieldwork, formal permission was obtained from the authorities of each church under study.

Overall, the research demonstrates that rigorous ethical consideration is integral to studies of sacred architecture. By combining informed consent, confidentiality, voluntary participation, respectful timing, and sensitivity to spiritual context, the study ensured that both human participants and sacred spaces were treated with dignity and care. These practices reinforced the credibility, transparency, and integrity of the research, establishing an ethically responsible framework that supports both academic inquiry and respect for the cultural and religious significance of the sites under study.

## 4. STUDY, SYNTHESIS, INTERPRETATION, AND DISCUSSION

This section presents the detailed case study analysis of the selected churches, examining spatial geometry, light behavior, and emotional responses. The analysis integrates architectural observation with phenomenological interpretation (Norberg-Schulz, 1980; Yin, 2018).

### 4.1. Case Study 1: St. Mark's Cathedral

The nave of the church is configured in a clearly defined rectangular plan, organized along a pronounced longitudinal axis that subtly guides both movement and visual attention toward the altar. This axial arrangement is fundamental to the architectural experience, establishing a deliberate spatial progression from the entrance through the nave and culminating at the sanctuary. Such a progression embodies the symbolic and ritualistic journey inherent in ecclesiastical architecture, where the act of moving through space

mirrors spiritual ascent and contemplation. The nave's organization follows strict bilateral symmetry, producing a visually balanced and coherent interior.

This symmetry enhances the legibility of the space, making it immediately comprehensible while simultaneously reinforcing the hierarchical order of sacred elements (Wittkower, 1999). Each spatial component—from columns to side aisles—is positioned to support this structured sequence, creating a sense of rhythm and guiding the eye toward the altar as the spiritual focal point.



Fig -3: Exterior façade

### 4.2. Spatial Analysis

The symmetrical plan of the nave plays a crucial role in establishing psychological stability and spatial orientation for occupants. By mirroring elements along the central axis, the interior provides a coherent visual framework that reduces cognitive dissonance and enhances legibility of space, allowing visitors to intuitively understand circulation and functional hierarchy (Arnheim, 1977). Symmetry also contributes to a sense of calm and order, reinforcing the perception of sacredness by creating a balanced and harmonious environment.

Proportional relationships between the width and height of the nave further enhance this sense of enclosure, producing a spatial equilibrium that fosters introspection and contemplative stillness. Visitors experience the space as simultaneously ordered and welcoming, with dimensions carefully calibrated to

provide comfort while maintaining the dignity and solemnity appropriate to ecclesiastical architecture.

#### 4.1.2. Case Study 2: Holy Trinity Church

Holy Trinity Church demonstrates a more pronounced spatial articulation when compared to St. Mark's Cathedral. The organization of space reflects a stronger emphasis on monumentality, particularly through its enhanced vertical expression. The interior volume appears more expansive, and the vertical articulation is visually dominant, creating a heightened sense of grandeur. Monumental columns and a deeper axial progression contribute significantly to the spatial drama, aligning closely with established English Baroque architectural principles that emphasize movement, hierarchy, and theatricality (Blunt, 1978). The architectural composition intentionally guides the observer's perception toward the altar, reinforcing the symbolic centrality of the sacred focal point.



**Fig -3: Interior upward vertical shot and Exterior façade**

## 5. CONCLUSIONS

The analysis confirms that spatial geometry plays a significant role in shaping emotional perception within sacred interiors. Axial alignment, symmetry, and enclosure contribute to a sense of order and orientation, reinforcing the psychological connection between user and space (Norberg-Schulz, 1980). The organization of form therefore becomes a primary tool in structuring emotional response.

Light intensity and direction further amplify the sacred experience. Focused or diffused daylight alters spatial mood, highlights focal elements such as the altar, and influences contemplative engagement (Pallasmaa, 2005). The quality of illumination directly affects the perceived atmosphere and spiritual depth of the interior.

Scale also determines the magnitude of psychological impact. Larger volumes and heightened ceilings generate awe and transcendence, whereas moderate proportions promote comfort and serenity (Rapoport, 1982).

Overall, colonial Baroque churches in Bengaluru demonstrate that despite climatic adaptations and moderated ornamentation, the essential spatial hierarchy and emotional potency of the Baroque tradition remain intact.

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## REFERENCES

1. Arnheim, R. (1977). *The dynamics of architectural form*. University of California Press.
2. Bachelard, G. (1964). *The poetics of space*. Beacon Press.
3. Barrie, T. (2010). *The sacred in architecture: Religious and spiritual buildings*. Routledge.
4. Blunt, A. (1978). *Baroque and Rococo: Architecture and decoration*. Penguin Books.
5. Ching, F. D. K. (2015). *Architecture: Form, space, and order* (4th ed.). Wiley.
6. Day, C. (2002). *Spirit and place: Healing our environment*. Architectural Press.
7. Eliade, M. (1959). *The sacred and the profane: The nature of religion*. Harcourt.
8. Giedion, S. (1967). *Space, time and architecture* (5th ed.). Harvard University Press.
9. Harries, K. (1997). *The ethical function of architecture*. MIT Press.
10. Holl, S., Pallasmaa, J., & Pérez-Gómez, A. (2006). *Questions of perception: Phenomenology of architecture*. William Stout.
11. Jones, L. (2000). The hermeneutics of sacred architecture. *Harvard Theological Review*, 93(3), 231–245.
12. Kieckhefer, R. (2004). *Theology in stone: Church architecture from Byzantium to Berkeley*. Oxford University Press.
13. Lang, J. (1987). *Creating architectural theory: The role of the behavioral sciences in environmental design*. Van Nostrand Reinhold.
14. Leatherbarrow, D. (2009). *Architecture oriented otherwise*. Princeton Architectural Press.
15. Metcalf, T. R. (1989). *An imperial vision: Indian architecture and Britain's Raj*. University of California Press.