

**Body and Mind Shaped by Built Form:
Experiences of Borobudur**

by

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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis.

This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

ABSTRACT

This thesis takes the form of a pilgrimage to the Buddhist temple of Borobudur in Indonesia to explore the relationship between spiritual practices and physical space, in particular analyses the relationships between space, practice and affect. In this thesis *space* is identified as an overarching category to include the physical, social and mental environments. *Practice* indicates repeated engagement by the participant, and lastly, *affect* signifies the personal capacity to be changed by architecture beyond the momentary interaction. The potency of *affective* architecture relies on a careful balance between curated architectural methods and the mindful involvement of the practitioner. My experience of a pilgrimage through the temple of Borobudur acts as an architectural laboratory in order to investigate first hand the physical architectonic elements and methods of perception which support and amplify a spiritual encounter. The goal of the thesis is to understand the potential for architecture to encourage or promote spiritual awareness to better understand the physical space of spirituality.

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To my parents, thank you for your constant love and support. You motivate me to embark on the things that give me purpose, and remind me to fulfill them with passion, presence and compassion.

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I am eternally grateful for the people, experiences and knowledge this thesis has brought into my life, I've become a better person because of it.

DEDICATIONS

Dedicated in loving memory of Jonathan Bennett.

Your love for life, adventure and creativity was infectious. You've enriched the lives of so many—I'll always remember our talks about distant lands and existence. Rest in peace dear friend.

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Where it all began...

I've always been a curious person interested in the phenomena of experience. One day in Rome, a world of wonder was revealed to me through a complex interaction of space, body, consciousness and intention.

"It's midday. October ninth. I finally experienced the Pantheon in all its glory, but now it's time to go home. The streets of Rome are narrow and uneven, filled with tourists and excitement around every corner, yet I keep my gaze ahead. By this time I'm already a local and I don't need to look around as I pass every piazza; I walk this route almost daily. I weave to my right to avoid the large crowd forming ahead by the buskers. As I make my way back into the center of the street, I look up and see the same church I have passed many times, only this time the door is open. I've never seen the door open before. Why is the door open? I look down and sitting on the steps, three teenagers are enthralled in their gelato. Maybe I should go in. Okay, yes I will go in. I stand in front of the stairs and look up, the church is dark and dreary, and almost even sort of ordinary looking compared to the rest of the beauties in this city. Yet, something about this church is enticing. So I put one foot in front of the next and walk up the stairs and in through the large doors.

As I quietly make my way inside, my eyes are drawn to the one man sitting at the very back row. He turns to me and offers a gaze of understanding. No smile. Just a peaceful, fully charged gaze. I walk towards the back row opposite of him and I sit down. After a few minutes, he leaves and I am alone. At this point, I am still trying to figure out what I am doing in this church instead of going home. As the man's footsteps begin to sound like a distant memory, the deafening silence starts to hit me. It almost seems to be emanating from the stone. It feels as though an echo would be returned if I made even the slightest noise. I turn back towards the entrance to see if the outside is still there. It is, but it's not here. I am here. I turn back. Captured again by the silence and stillness around me.

The church is dark and abandoned. The two round columns support a large arch, and beyond it, a dome that seems to ascend into the heavens, and beyond that, an altar where you can see the evidence of the believers who stood there not long ago. Melted candles, displaced covers, and an off-center cross.

The space is tall, and I can feel myself shrinking and everything around me growing. I can feel the space around me being tall. Like you can feel someone standing too close to you, but it's as if the ceiling of the church is too close, even though I'm this tiny thing in a large space. This seems absurd, but at the same time, so fascinating. The more I allow myself to be here, the more I am.

I somehow have an understanding of each corner. The dimly lit dome beyond the tall, arched ceiling becomes the destination of my focus. I don't move, I can't move, but I know the dome. I can no longer identify my physical location but I can identify with the space inside the church, with the corners masked by shadows, and the light hitting each ridge in the arch, I can sense it. And I can feel myself in all of it.

And at this moment, I no longer look at my arms and feel their boundaries, I can't tell where my feet end, and the floor begins. I am not constrained to the physical body that I had defined myself by for all of my life. I feel myself just be in this immense abandoned space, there is no separation between body and space.

My consciousness floats for a little while longer until the concept of time starts to flood back. With each second that passes, more and more of my body becomes familiar to me. And as if nothing even happened, I'm sitting in the back row of a church all alone."

“The understanding of finite creatures in an infinite universe is necessarily bounded; consequently, in any given era and under any given philosophical, scientific, artistic, religious or ideological outlook, there is always an ‘edge of thought’, a boundary between the known and the abyss. Some live within that boundary, some perambulate it. A few cross it and attempt to build and inhabit the abyss. Stepping outside the known world, building past the edge of thought, they enlarge the world for all. These I call architects.”

— Marcos Novak

INTRODUCTION

Buddhist temples act as a belief system concertized outside the body—an association which most sacred spaces aim to accomplish. However, as the 21st century evolves, it brings a substantial decline in the religious population—more people are identifying as spiritual or atheist.¹ Religion consists of fundamental subjective beliefs, while spirituality is an individual journey, sometimes described as experiencing a sensation of awe. This sentiment is known to affect mood disorders and positively assist in the psychiatric process.² Though each person may interpret and be affected differently in spirituality, the individual consciousness sits at the base of these experiences. There are many interpretations as to what the consciousness is explicitly, but broadly, it represents the self as an entity, independent of the physical body.

Registering how the body is affected by the environment provides insight into the effects on the mind, and finally, the implications on the consciousness—changes in dispositions, fundamental values and sense of identity. These changes are unique to each person, as well as challenging to predict due to the high degree of involvement required from the individual. Therefore, they will be considered in the form of affect—the ability to create change.

This thesis explores the ability of a built environment to develop affect and the perceptive strategies employed by an individual to create a linkage from that context to the body, mind and consciousness. Taking an example from the Buddhist monks who have successfully developed this relationship, the pursuit of bringing the worlds of architecture and consciousness closer together has guided me on a

spiritual and architectural pilgrimage within Indonesia to practice alongside Buddhist monks at the Temple of Borobudur. I did not intend to become a student of Buddhism, but in the process have come to respect its values and architectural intelligence.

This thesis contains two divisions—the theory and the laboratory. My initial research consists of the conceptions of consciousness, design strategies for sacred spaces, methods of receiving and processing environmental stimulation and Buddhist practices. These findings lay the foundation for the concepts explored throughout the investigation in Indonesia. The final stage is the excursion, which acts as a laboratory to substantiate these methods, analyze the architectonic elements which support the spiritual encounter, and experience the process of the monks through full immersion.

Affect is a complex phenomena experienced differently by each person and dependent on many factors. Because of its variability, affect cannot be reduced into a formula, however, several influencing factors can assist in a developing understanding of the experience. In addition to active participation, affect is reliant on the conditions of the context, personal intention, memory, knowledge of the culture, and many other factors, from which any can drastically change the outcome. In the words of philosopher and anthropologist, Erik Bordeleau, “to experience the chemistry of openness is not possible through “opening yourself” but can be affirmed by entrapping yourself within a strategic augment with the outside becoming a lure for its exterior forces...one must seduce the exterior forces of the outside.”³

To ensure a meaningful experience while

participating in the rituals at the Borobudur Temple, I attempted to take charge of the factors which may potentially intensify my experiences. Before the excursion, I educated myself on the history, culture and practices of Buddhism through a series of readings and guided meditations.

Buddhist rituals revolve around the practice of mindfulness, using the synchronization created from the body's movements, vibrations and meditation. The mindful incorporation of architectural forms in these rituals only intensifies the results for the monks. To fully understand the implications of the architecture in these rituals, the majority of my time was spent at the Borobudur Temple documenting the physical and experiential conditions, then travelling to various areas within Indonesia to observe other sacred spaces such as Masjids, Hindu temples and other Buddhist temples. Gathering information regarding the forms and activities of other temples allowed for the extraction of the elements of architecture which are unique to the Borobudur Temple based on its rituals.

The intention is not to create a prescribed experience, but to provoke the practitioner to become more self-aware. The architectural elements which repeat through a majority of sacred structures indicate they are beneficial in the practice of spirituality. Though spirituality is not dependent on architecture, it is dependent on intention and the spaces which facilitate practice. The purpose of these buildings expands to become a facilitator of sacred space. Does architecture have the capability of guiding beings through time and space to find potent moments of self-discovery?

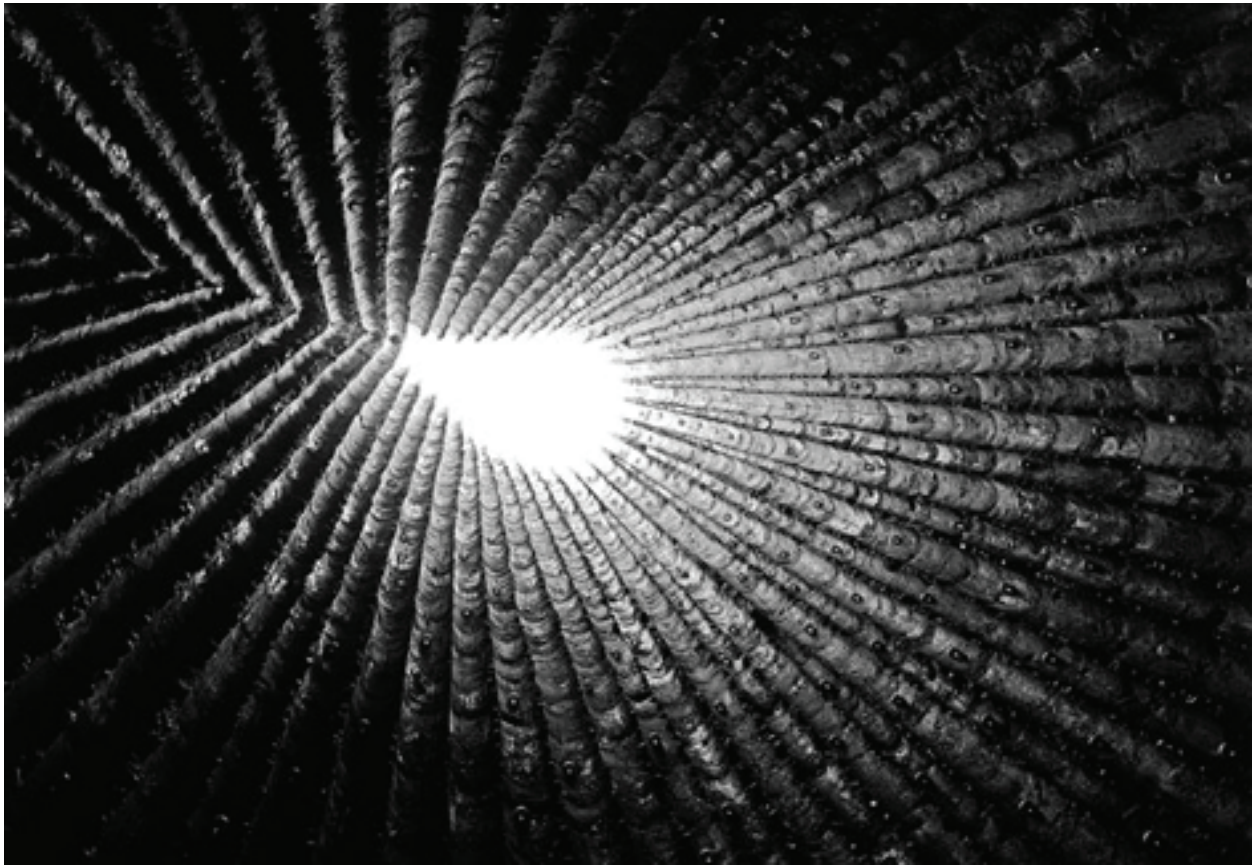


fig. 1.1 Bruce Klaus Field Chapel (Mechernich, Germany)

Source: "Bruce Klaus Field Chapel ." Digital image. Scaffold and Lace. April 23, 2015. <https://shaumyikasharma.wordpress.com/2015/04/23/architect-of-dreams/>.



THEORY



CONSCIOUSNESS

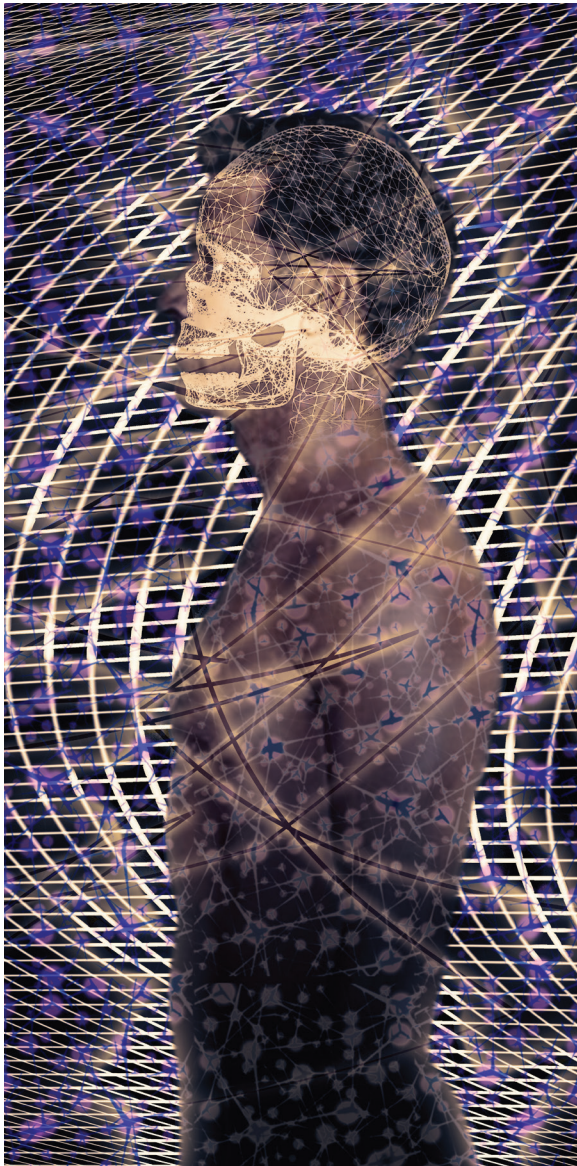


fig. 2.1 Electromagnetic energy emerging from human body to connect with the surrounding electromagnetic field of the environment

Source: Author's own image

Regardless of the separation caused by upbringing and class, the eternal longing for light, health and happiness are fundamental desires shared by all members of the human race. These aspirations are easily identified through many religions, manifesting the universal quality of consciousness and human experience.

The many iterations regarding humanity's creation and existence have always been the cause of considerable debate. The categories of thought exist on a spectrum and include, "atheism, agnosticism, deism, theism, pantheism, polytheism, henotheism, panentheism, and eschatological panentheism."¹ These are the categories of thought within the two broader groups—religious and spiritual. While religion places the overarching entity exterior to the person, spirituality places it within the self.

Under the category of religion, Classical Theism describes the overarching force as "God," an independent entity which created the human race. In some interpretations, one can foster a relationship with "Him," and in others, "He" exists as a purely creationary force²—these reference theism and deism, respectively. Under spirituality, Pantheism identifies each person themselves as a divine force, while Panentheism describes a single, all-encompassing entity, including nature, the earth, humanity, the universe and beyond.³ This concept is also found in Panpsychism in which the single entity is the base of all things and each physical object has this entity within them. Possibly the most famous quote to come out of this frame of thought is, "you are the universe experiencing itself," as said by Alan Watts.

The term given to address a person's existence

beyond their physical state is ‘consciousness’, which can be observed in two fashions, the waking state with the capability to perceive, and communicate, or “being aware of one’s awareness.” When looking at the self neurophysiologically, the two views seem to unite—vigilance and awareness.⁴

To summarize the work of Elaine Perry, there are four characteristics which allow us to assess the level of consciousness of an organism. The first of which is the ability of an organism to interact with its environment, called activation, or basic awareness.⁵ The second is the field available to the organism to have “conscious processing,” in this case called the awareness span—the basic awareness on top of which the mind can act, the potential sensory and motor systems.⁶ The third is the level of mindfulness of the organism—the ability to receive a range of responses from experience, called sensory dynamics, and the intelligence that controls the selection of mental input responses to be processed. The last is the self-awareness and ‘I’ness” — the ability to realize control over the body and mind, and the internalization of the responses in relation to the self.⁷ This self-awareness is what social theorist and philosopher, Brian Massumi refers to as the “feeling of having a feeling” or the “perception of perception.”⁸

Other interpretations of consciousness, such as that of the Buddhists, build on this analogy by adding a state where one is not bound by thought—the point at which “there will be no external or internal impulses” affecting or acting on the mind or sensory systems.⁹ Perry proposes that this state of being consciously aware is “the only direct link to reality available” and that any sensory stimulation received is

a product of the mind and bodily system.¹⁰

Buddhism explains a similar progression through six forms which create the individualized self—the physical form, feelings or sensations, perception, mental formations, and consciousness. The consciousness is broken down into eight components. Five of these are the sense consciousnesses, the eye, the nose, the ear, the tongue and the body, the sixth is the mind consciousness, the seventh is the klesha-mind, and the eighth is the all-base consciousness.¹¹ The sense consciousnesses are the body’s modes of receiving stimulation; the klesha-mind is the part of the self that identifies itself as “I” and the all-base stores an imprint of all past events and acumen.

Buddhist meditations use the senses as an object for meditation. The senses are impermanent and therefore are ideal as an object for observation. For example, directing the attention to one specific object using the eye consciousness maintains an undistracted mind, focusing on the task of reflection with the mind consciousness.¹² Many temples use this tool, displaying statues of Buddha upon which the practitioners may focus.¹³ With significant meditation, the practitioner masters the ability to observe with less attachment.

SACRED ARCHITECTURE



fig. 2.2 Chiesa di Sant' Ignazio di Loyola
Source: Author's own image

According to environment-behavior researcher, David Seamon, “a defining characteristic of any worthwhile place is that it has its own spirit - its own *genius loci*.”¹⁴ He reflects on sacred space, declaring that there is an inseparable relationship between the landscape, the architecture, the social activities, the rituals and symbolic elements of the selected place.¹⁵ They exist this way because of the involvement of the people who inhabit them, eventually becoming dependent upon each other.¹⁶ The spaces become “in some manner themselves alive,” as they are simultaneously modified as the human life grows, and changes.¹⁷ On the architectonic level, the elements of religious buildings work in conjuncture with each other to create the base context for spiritual experience. According to Jon Cannon in *The Secret Language of Sacred Spaces*, the elements usually found as components of these structures are an axial or centralized plan, man-made mountain, an enclosure, a hall, platforms and entrances. Not all elements must be present for a building to be considered a sacred architecture.

The examples of Buddhist, Muslim and Christian sacred architectures will be used to exemplify the six architectonic elements outlined by Job Cannon. The Buddhist architecture used is the Borobduur Temple in Indonesia, the Muslim architecture is the Blue Mosque in Turkey, and the Christian architecture is the Milan Cathedral in Italy.



fig. 2.3 BUDDHIST - Borobudur Temple, Indonesia
Source: Author generated image



fig. 2.4 BUDDHIST - Borobudur Temple, Indonesia
Source: Author's own image

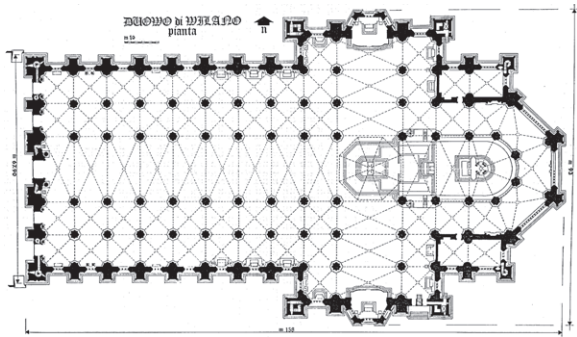


fig. 2.5 CHRISTIAN - Milan Cathedral, Italy
Source: Ferrari "Survey plan of Milan Cathedral." Cambridge Core, 19 Oct. 2016, www.cambridge.org/core/journals/architectural-history/article/first-principles-gabriele-stornaloco-and-milan-cathedral.



fig. 2.6 CHRISTIAN - Milan Cathedral, Italy
Source: LaChiusa, Chuck. "Milan Cathedral." Buffaloah, 2016, buffaloah.com/a/virtual/italy/milan/cathed/ext.html.

AXIAL/CENTRALIZED PLAN

Sacred architectures usually have axial or centralized plans that are symmetrical, and divided into simple polygons. They place emphasis on the primary religious element, either an altar or the cupola simulating the light from heaven. Axial plans tend to be rectangular with a focal point at the end, and centralized plans tend to have a circular structure with the focus more towards the centre. The centralized plans often reference the mandala, a spiritual symbol for the universe which spans through the Buddhist and Hindu faith.

MAN-MADE MOUNTAIN

The "term 'mountain' is often a conceit for a site of spiritual retreat"¹⁸ and is referred to repeatedly in many religious buildings. A mound can also be placed over a sacred burial site as a symbol to represent ascendancy to the heavens. The idea of the mountain describes a construction significantly taller than the observer, acting as a sort of authority in comparison, but it is also tall for visibility among its context. The man-made mountain also exists symbolically, describing the journey of a practitioner ascending towards light.



fig. 2.7 CHRISTIAN - Milan Cathedral, Italy
Source: LaChiusa, Chuck. "Milan Cathedral." Buffaloah, 2016, buffaloah.com/a/virtual/italy/milan/cathed/ext.html.



fig. 2.8 CHRISTIAN - Milan Cathedral, Italy
Source: LaChiusa, Chuck. "Milan Cathedral." Buffaloah, 2016, buffaloah.com/a/virtual/italy/milan/cathed/int.html.



fig. 2.9 MUSLIM - Blue Mosque, Turkey
Source: "Blue Mosque." Windstar Cruises, blog.windstarcruises.com/2012/01/greek-isles-turkish-delights/istock_000011099162small-2/.

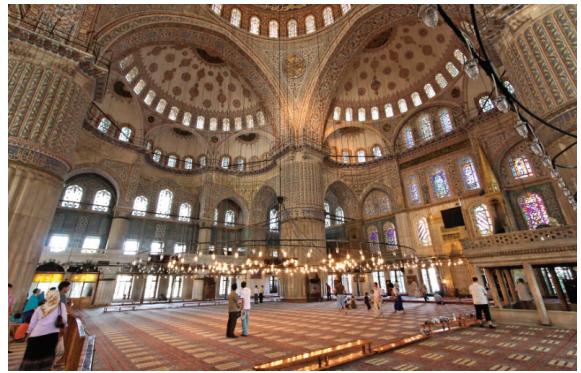


fig. 2.10 MUSLIM - Blue Mosque, Turkey
Source: Perez, Christian. "The blue mosque." Wikipedia, 26 Apr. 2013, commons.wikimedia.org/wiki/File:Inside_Blue_Mosque_3.jpg.

ENCLOSURE

The enclosure is a universal element. The archetypal characteristics of an enclosure are low walls, punctured with gates, usually one main one used as the entrance. Religious buildings typically contain the more essential elements towards their centre. The enclosure is nested as to allow several thresholds, but depending on the type of religious architecture, may be entirely exposed. The enclosure of sacred space is also found in the concept of Temonos in Greek antiquity where a barrier is created around a holy ground as to enclose a sanctuary.

HALL

The hall is usually the covered portion of the enclosure and provides a subdivision of the internal spaces, divided by columns in a row. It is known as the heart of the building, used to hold large gatherings and religious proceedings.

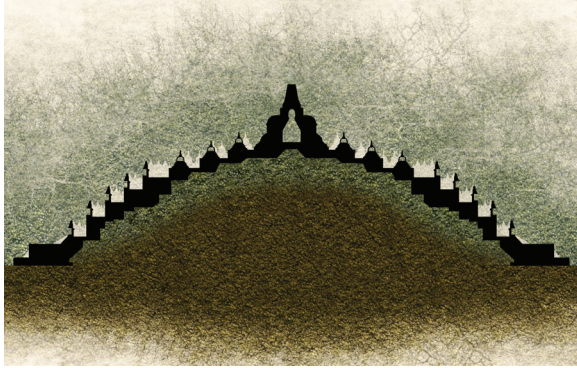


fig. 2.11 BUDDHIST - Borobudur Temple, Indonesia
Source: Author generated image



fig. 2.12 BUDDHIST - Borobudur Temple, Indonesia
Source: Author's own image



fig. 2.13 MUSLIM - Blue Mosque, Turkey
Source: "Blue Mosque." Windstar Cruises, blog. windstarcruises.com/2012/01/greek-isles-turkish-delights/istock_000011099162small-2/.



fig. 2.14 MUSLIM - Blue Mosque, Turkey
Source: "Blue Mosque." Rue du se Jour, 22 Nov. 2013, www.ruedusejour.com/turquie/circuit-istanbulantalya/jour-2-istanbul-sultan-ahmet-camii/.

PLATFORMS

Platforms create a possibility for the practitioners to ascend towards the light at the top of the man made mountain. Raised platforms also ensure visibility not only towards the centre when the practitioner is on the exterior, but outwards beyond the building when the practitioner has reached the middle. It provides a feeling of achievement for the practitioner, as they have gained the ability to oversee the landscape and all of the earthly proceedings from which they began.

ENTRANCES

The gates used for the entry are usually reflective of how the building is used, decorated with cultural and religious icons, foreshadowing what will be happening in the interior. The gate marks a threshold that the practitioner must pass through as it is an act which is meant to prepare the practitioner for their "encounter with the sacred." It is the gateway through a barrier which both unites two spaces, while creating separation between two spatial, social and mental conditions.

SPATIAL THEORY

The analysis of a variety of spatial theorists has led me to understand that space is built on interdependencies. As with the interpretations of consciousness, there is a lot of dispute among philosophers regarding the different categories that makeup space. The physical, social and mental spaces are the most common terms and delineations used. The

wording of the definitions may vary from philosopher to philosopher, but the content remains the same. The physical space is the world that can be touched, the social space is the network between people created in the physical space, and the mental space is the cognitive association and perception relating to both the physical and social spaces. The three are interdependent. In his

<p>FIRST SPACE <i>THE PHYSICAL</i></p>	<p>‘The Real: That which resists representation, what cannot be symbolized – what loses it’s “reality” once it is symbolized through language” (Jacques Lacan) “First: Empirical construction of space. Real and tangible, physical space.” (Nigel Thrift) “Space: the physical setting in which everything occurs.” (Robert Preucel, Lynn Meskell)</p>
<p>SECOND SPACE <i>THE SOCIAL</i></p>	<p>“Field: A setting in which agents and their social positions are located. The position of each particular agent in the field is a result of interaction between the specific rules of the field, agent’s habitus and agent’s capital (social, economic and cultural). Fields interact with each other, and are hierarchical.” (Nigel Thrift) “Place: The outcome of the social process of valuing space; a product of the imaginary, of desire, and the primary means by which we articulate with space and transform it into a humanized landscape.” (Pierre Bourdieu)</p>
<p>THIRD SPACE <i>THE MENTAL</i></p>	<p>“The Symbolic: Formation of signifiers and language and is considered to be the “determining order of the subject.” (Jacques Lacan) “Habitus: System of dispositions (perception, thought and action) created in response to conditions agents encounter.” (Pierre Bourdieu)</p>
<p>FOURTH SPACE <i>THE REFLECTED</i></p>	<p>“The Imaginary: Internalized image of this ideal, whole, self and is situated around the notion of coherence rather than fragmentation” (Jacques Lacan) “Doxa: The learned, fundamental, deep-founded, unconscious beliefs, and values, taken as self-evident universals, that inform an agent’s actions and thoughts within a particular field.” (Pierre Bourdieu)</p>

Table 2.1 Categories of Space defined by selected spatial theorists
 The works of 17 spatial theorists have been studied (full analytical chart available in Appendix B on page 132) in order to extract the most applicable series of theories in relation to spirituality in architecture. The elements of the selected theories have been arranged in relation to each other and the first, second, third and fourth spaces.

philosophy, Pierre Bourdieu expands this trilogy to include the Doxa—the fundamentals which “inform an agent’s actions and thoughts within a particular field.”¹⁹

As humans inhabit the built environment on a daily basis, architect and researcher Julio Bermudez stresses that there must be more focus on the “phenomenological production and reception of architecture.” He argues that this approach addresses the more ephemeral experience of architecture, as this mirrors the practice of spirituality.²⁰ It is focused not around the “visual, but in kinesthetics, touch, hearing, and even smelling,” making them a “locus of profound phenomenologies” themselves by creating an “‘invisible’ existential atmosphere.”²¹ Sacred architectures are known for their ability to become the generator of a religious or spiritual ambiance, and in turn, an “invisible existential atmosphere.”²² For it to be effective, the people within it must be willing participants in the experience—it is their senses which decipher the phenomenologies and allow them to exist. Therefore, there must be active participants in addition to the space to create any affect. Hence, between the third and fourth spaces, the concept of Practice has been inserted. Practice is defined by the voluntary repetition of spatial interaction by a person, whether they are active, passive, internal or external. With conscious practice, the practitioner is able to expand their capacity for change of their fundamental knowledge, dispositions, and values—affecting the Doxa. This is unlikely to happen quickly, or without mindful practice, as the inner discipline and a broader range of senses and bodily methods are acquired over time.

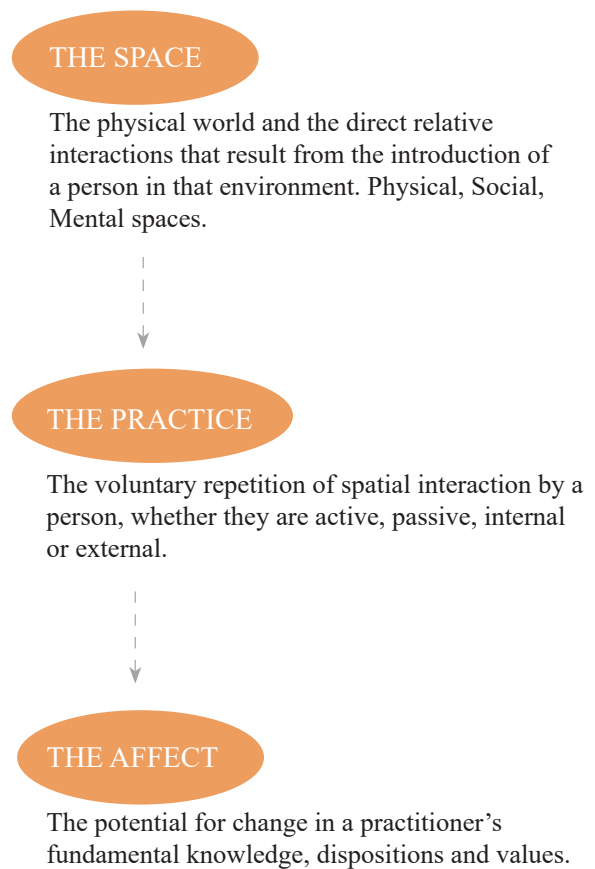


Table 2.2 A model of the interdependencies of Spatial Analysis

Using the compiled theories (from the previous page), the progression from space to practice to affect has been developed. In this analogy, the first, second and third spaces are considered as part of the space category, and the fourth, as the affect. The practice has been inserted as the method through which to progress from the space to the affect. In summary, to advance beyond the simple interaction with space and to be affected, one must open themselves and participate in the experience.

	<p>AFFECT <i>Source: Elaine Perry 2010, pg295</i></p>	<p>CONSCIOUSNESS <i>Source: Khenchen Rinpoche, Susanne Schefczyk.</i></p>
<p>FIRST Phase of Awareness</p>	<p>NEUTRAL The ability of an organism to interact with it's environment, called activation, or basic awareness.</p>	
<p>SECOND Phase of Awareness</p>	<p>PERCEPTION The field available to the organism to have "conscious processing," in this case called the awareness span—the basic awareness on top of which the mind can act, the potential sensory and motor systems.</p>	<p>5 SENSE CONSCIOUSNESS The self is broken down into eight consciousnesses; five of which are the sense consciousnesses, the eye, the nose, the ear, the tongue and the body, They each use the respective body part to receive stimulation. These consciousnesses are considered unstable as they immediately vanish after the stimulation is no longer available.</p>
<p>THIRD Phase of Awareness</p>	<p>EFFECT The level of mindfulness of the organism—the ability of the organism to receive a range of responses from the experience, called sensory dynamics, and the intelligence that controls which of the mental input responses are processed.</p>	<p>MIND CONSCIOUSNESS The mind consciousness reflects upon the mental image created by the 5 sense consciousnesses to acquire its own interpretation of the stimulation. The mind is unstable—when the stimulation is no longer available, the 5 sense consciousness vanishes, and the mind consciousness has no mental image to reflect upon.</p>
<p>FOURTH Phase of Awareness</p>	<p>AFFECT The self-awareness and 'I'ness," the ability to realize the control over the body and mind, and the internalization of the responses, and relation to the self—how that experience changes us, changes the way we perceive, how we remember things, our definitions of right and wrong.</p>	<p>KLESHA-MIND AND ALL-BASE The klesha-mind is the part of the self that identifies itself as "I" and views the surrounding world in relation to itself. Memory and an imprint of all past events are stored in the all-base. The klesha-mind and the all-base consciousness are constant and happen without initiation, and therefore are stable.</p>

Table 2.3 Juxtaposing definitions of Affect with those of Consciousness

Source: Author's own table

The following table brings together Affect and Consciousness in order to understand the portions which are equivalent between the two. This resulting equivalences can aid in the understanding of how to transfer between stages of affect, and what portions of consciousness these changes may be affecting.

AFFECT

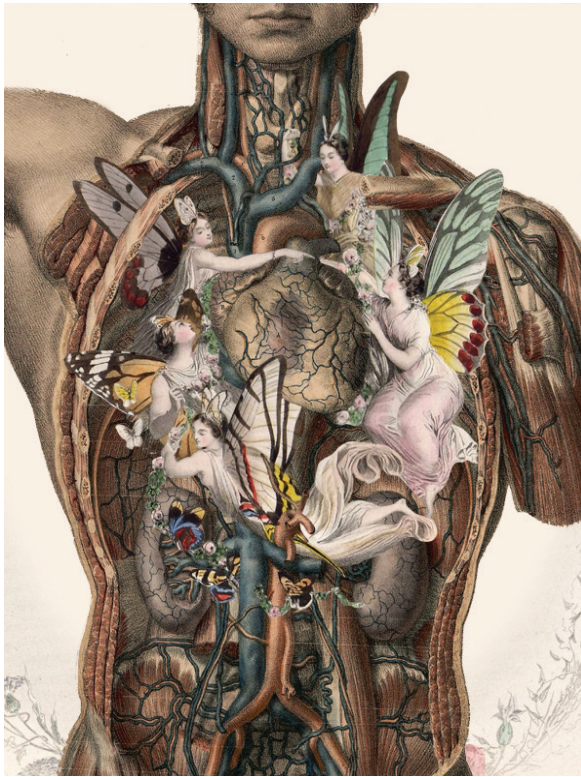


fig. 2.15 *Architecture and Human Psychology*
Source: Ffo. Digital image. Art-Spire. August 2014.
Accessed December 13, 2016. <http://www.art-spire.com/en/illustration/the-strange-and-fascinating-universe-of-ffo/>.

Affect is quite mysterious and though one can ultimately measure it, affect is not an absolute truth and is experienced differently by each person. Aside from the object of stimulation, the level of affection is highly dependent on the subject's openness to the experience.

From its academic significance to the essence of lived experiences, affect encompasses a subtle emotional dynamic, and qualitative personal

reformation based on a spatial gestalt—the elements of spatial elements coming to together to create a united whole.

The efficacy of affective architecture relies on a careful balance between the skillfully created architectural construction and the mindful involvement of the practitioner. Together, methods employed by individual and the architectonic elements create a potential for change.

According to Melissa Gregg and Gregory J. Seigworth, affect is considered a force which is “insisting beyond emotion,”²³ and in “ever-modulating force-relations.”²⁴ Discussions around affect usually refer to “affective encounters” which take place in and bring to life to a certain “ethico-aesthetic space.”²⁵ These qualities also exist in “atmospheres of sociality, crowd behaviours, contagions of feeling, and matters of belonging.”²⁶ Ultimately, affect is “the hinge where mutable matter and wonder perpetually tumble into each other.”²⁷ It is what changes the view and desire to wonder about the surrounding world; it is “what sticks...or what preserves the connection between ideas, values, and objects.”²⁸

Simplified, the concept of affect becomes an inventory of singular encounters, each containing a set of possibilities with “continuous, shimmering gradations of intensities.”²⁹ Setting up a network of potential stimulus options then transfers the authority to the observer allowing an autonomous experience, based on the stimulus that is accepted and processed. This design strategy requires human involvement and becomes stagnant if not engaged by the observer, meaning photographs of the space do not convey the real experience as they are unable to capture the full

immersion into the available stimuli beyond sight.

Because of this independent nature of affect, Sara Ahmed suggests that the atmosphere experienced when entering a space “depends on the angle of [the observer’s] arrival,” though the atmosphere itself is angled before the arrival. This can be due to a variety of attributes ranging from previous events, current disposition, dispositions of the people simultaneously engaging in the space, or even the known history of the place. This can be referred to as a bloom-space due to its multi-pronged structure of possible affective moments.³⁰ The bloom-space is loaded with possibilities of affect, where the location, timing, appearance, and general context all contribute to the perception of the space.³¹ Because of this and the contamination of “sensate experiences, including affective experience” in the mind, psychologist and theorist Silvan Tomkins states that there is “no pure cognition,” at any given moment, all experiences are plugged through the filter of old memories, and values.³² The way things are experienced is dependent on the “cross-modal networks” within each person which link “perception, affect, the senses and emotions.” The transfer between these links is synesthetic, in the same way that synesthesia of the sense functions.³³ Social theorist, writer and philosopher, Brian Massumi even refers to affect as synesthetic, saying “the measure of a living things interactions is its ability to transform the effects of one sensory mode into those of another.”³⁴ The difference between emotion and affect must be stressed, especially in regards to the “qualified” versus “unqualified” intensities.³⁵ Emotion is regarded as a qualified intensity as it can be owned and recognized and shows progression into meaning. Affect, on the other hand, is unqualified in the way that is not immediately recognizable, though encompasses passion and ethics in a non-linear manner. Affect is also said to be “potential and emergent,” where

emotions are not.³⁶

Within the aforementioned affective quality of groups resides a mimetic nature, both voluntary and involuntary, resulting in a “tendency for those involved to converge emotionally.”³⁷ In this mimetic communication, the face is the most readily recognizable feature, and thus it “seems to diagram itself onto the sensuous qualities of other images in which it does not explicitly appear,” such as architectures, creatures, and “choreographed bodies.”³⁸

Similarly, the acquisition of experience through mimesis is long standing since infancy.³⁹ The concepts of rhythm and movement are also relevant as they are used as identification tools to sync bodily rhythms.⁴⁰ “Embodied simulation” is where the mirror neuron system makes it possible for brains to set off the same neural networks while watching another person engage in an action as if they were, in fact, doing it. This allows the brain and body to experience a somewhat similar feeling as someone performing a task, although they are not participating.⁴¹ This is due to the interpretation of senses, though it is important to stress the use of all of the sense, as they “rarely operat[e] in isolation” from each other, and their interdependency indicates synesthesia.⁴²

For Massumi, “quantum indeterminacy puts affect at every level of matter such that the distinctions of living and non-living, the biological and the physical, the natural and the cultural begin to fade.”⁴³ Though affect seems like a momentary event, its true value lies in its long-term result as the accumulation of affect can “form dispositions and thus shape subjectivities.”⁴⁴ For example, recognition is an affective force, and the accumulation of the sensation of being recognized increases a sense of self-worth.⁴⁵ There is potential for a person to become predisposed to act and react a certain way if similar experiences

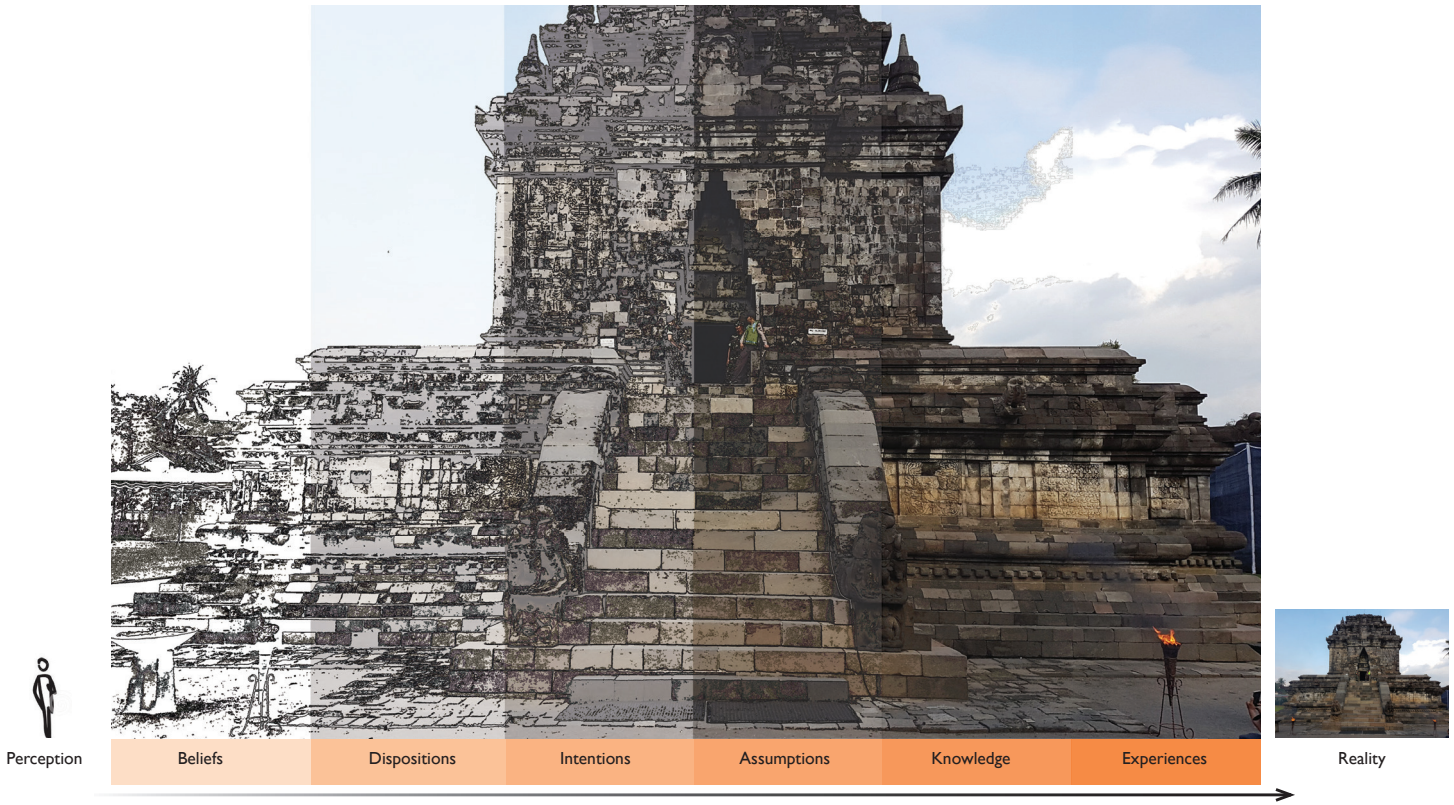


fig. 2.16 Filters of perception that each person uses to create their individual reality Source: Author generated content

are repeated enough for the affect to accumulate and therefore create these dispositions.⁴⁶

In a simplistic association, affect can be directly compared to the phenomenology of the body. Having the ability to develop a “sense of bodily schema” through interactions with the surrounding environment,⁴⁷ and “a sense of self is formed through engagement with the world and the affect this generates.”⁴⁸

This thesis analyses 5 affective strategies: phenomenology, proprioception, senses and synesthesia, mimesis, and collective behaviour.

PHENOMENOLOGY

Through a concept called phenomenology, the observer engages in conscious viewing. In the words of Hegel, it is the “development of the human spirit from mere sense-experience to ‘absolute knowledge’.”⁴⁹ Instead of attempting to prescribe an impression, phenomenology disregards the physical object of interest and hones in on the memory and perception of it. This is called the transcendental phenomenological reduction. The viewer begins to separate “the object being presented, with the presentation of the object,” creating an undeniable trust in their perception.⁵⁰ This reduction provides the absolute knowledge which Hegel was mentioning by focusing on the authenticity of the experience, not the

authenticity of the object.

The manner in which one perceives is a direct result of the experiences they have had in the past, the presentation of the object, and the extent of the knowledge they have on the subject.⁵¹ Instead of attempting to prescribe an impression, phenomenology disregards the physical object of interest and hones in on the memory and perception of it. This phenomenon is called transcendental phenomenological reduction.⁵² The process of this reduction begins with acknowledging the difference between seeing an object in its reality, and the reflection of the objects inside the mind.

It is physically impossible to know all of the details of the object, even if all of the angles are exposed, there are infinite numbers of conditions that can change the perception of an object. The image created in mind is known as absolute knowledge.⁵³ It is independent to each observer. When the viewer can trust that the observation of what they perceive in mind is the object which they are perceiving, this becomes true knowledge. The transcendental phenomenological reduction attempts to achieve the reduction of an object to its most authentic form in the mind. Similarly to reading a book, an observer looks at a series of markings in ink, words on a piece of refined wood, paper, while able to acknowledge that they are reading. The reduction develops further when the viewer begins to have images and emotions created in their mind from the text. The focus then shifts from looking at the piece of wood with markings to the experience.

In the phenomenology of architecture, the object of interest becomes space. The critical difference being that space can be physically inhabited. There are three main elements which influence the perceptions of space—form, material and light.⁵⁴ Each element has the capability of altering the perception of space

but are more effective when used together.

Form dictates spatial occupation and the areas which allow light to penetrate. It also creates spatial conditions that evoke distinctive reactions from the space, either enclosure or openness, stability or chaos, lightness or strength.⁵⁵ These can be determined by the person's stature as directed by the form. For example, if the pivotal moment of interest is above the observer, they must look up which changes their natural positioning, therefore actively engaging them.

The next element is material. Overlaid on top of the form, it controls how light bounces off it depending on the texture. If the natural elements interact with space—rain, snow, wind—the materials react to them in unique ways. Water may become trapped between the cracks, and catch a glimmer of light into the crevasses of the wood, or beads of rain may slide down mirror-like glass creating a curtain between inside and out. Aside from the immediate impact of outside forces, a material also influences the mood of the space—wood creates a warm tone, and concrete creates a subtle strength, but also an isolating and crisp tone. This association of materials to a distinctive tone goes back to the concept of memory. Wood is reminiscent of a forest and nature, whereas concrete is reminiscent of roads and sidewalks. Space relies heavily on the material palate to set the atmosphere.

Lastly, light. It does not only refer to bright, enlightened spaces, but also the spaces left in shadow and darkness. It possesses the power to change the atmosphere of space—darkness is the unknown and bleak, and light is all knowing and full of life; form and material can manipulate these qualities.⁵⁶ A single beam of light cutting through stark darkness is more powerful than a fully lit room. This phenomenon accomplished through the delicate design of the form.

In successful phenomenological designs,

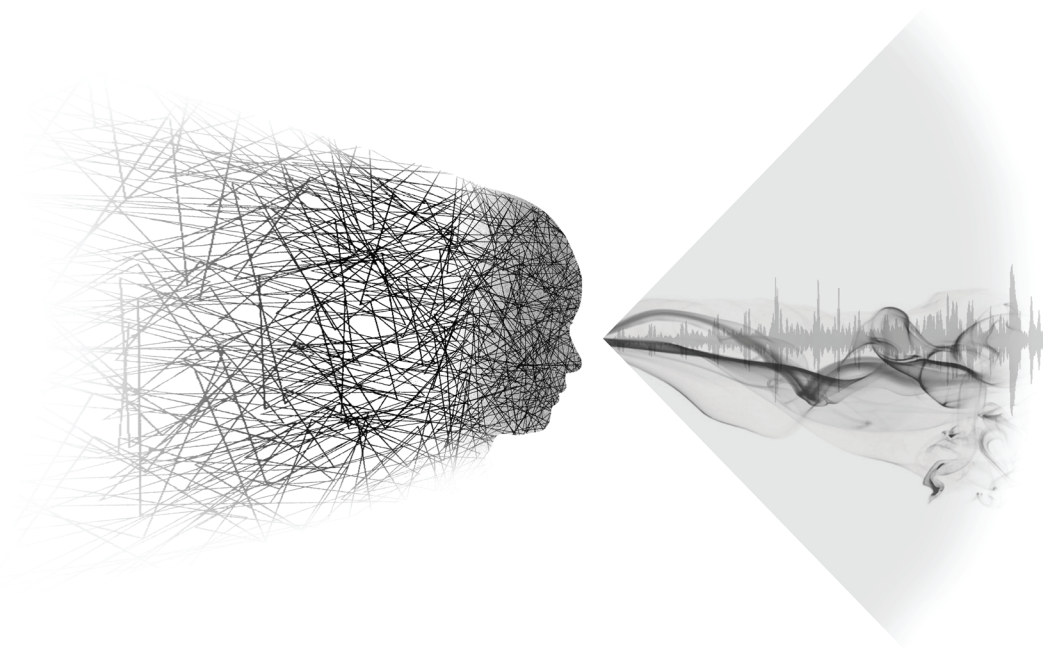


fig. 2.17 Sensual Mnemonics

The above image shows the intake of sight, smell and sound creating many links of associations through a process called mnemonics. Mnemonics allows the subject to more readily recall memories due to multiple sources of association from the senses.

Source: Author's own image

architects account for a change in lighting, whether it is a beautiful sunset coming in from the west or artificial lighting in the midst of night. In their designs, the form does not stand alone without impacting lighting, the spatial occupation of the observant, and the environment surrounding their creation. They take into consideration that the weather and age will eventually tarnish the materials they use, but they do not let these things take their toll on their design. The architects anticipate these conditions and add layers of complexity by designing the reaction in the form, material, and light. It is important to not only see the architecture for what it is but to recognize the impact of the external factors.

To view a space phenomenologically, the observer must make the distinction between “is” and

“seems is”— the concept of presenting things in a specific condition to create a unique perception of the object of interest.⁵⁷ Architects, in accounting for the change in lighting, aging of their piece, and spatial occupation, skillfully create these conditions.

PROPRIOCEPTION

Proprioception is knowing where the body is relevant to the surroundings. It brings together the body and space in a mental model as it is a “distinguished sense of bodily direction,” otherwise described as a bodily tendency. The body can be self-aware in feeling the experience of having a feeling⁵⁸ and experiences as a “memory without content,” as the body would just be recalling “just pastness.”⁵⁹

Proprioception brings together the body and space in a mental model. Proprioception comes from the sixth sense, using its “self-referential sense” to judge location and displacement on “bodily memory...rather than visible form.”⁶⁰

According to Pallasmaa, through the muscular and skeletal systems, the body can register movement, balance, and scale due to the bodily position.⁶¹ This bodily knowledge provides useful feedback to the mind to be able to locate itself in relation to its environment. The body can create a relational model of itself in space by referring to its previous position with respect to the “shape of the space.”⁶² This skill of proprioception is beneficial in the experience of space as it allows the inhabitant to be unconsciously connected to space.

SENSES AND SYNESTHESIA

With an ability to create distinct spaces corresponding to the characteristics of each of the five senses, there is potential in the combination of their attributes. This concept is named synesthesia—the crossing over or uniting of the senses.⁶³

The five established senses originate from the cosmic body—vision relates to fire and light, hearing comes from air, vapour brings smell, taste is to water and touch is to earth.⁶⁴ Architecturally, the senses are regarded as verbs as they create different feelings due to their characteristics.

Sight has become the sense of isolation due to its ability to be used from a distance; it does not require the observer to be within a close range to receive a sight. It is directional; it excludes a portion of the context by viewing in one particular direction.

Hearing, on the other hand, is an incorporating sense through its omnidirectional nature. The subject receives sound whereas, with sight, the subject regards

the object. Sound is malleable with its ability to refract and be softened, providing indications of the context. With the use of echolocation, similar to proprioception, sound can assist in the location of self in space. Even the sound of one’s own footsteps can create a sense of comprehensible scale.⁶⁵

The sense of touch is one of intimacy and contingency as it requires the subject and object to be near in time and space. It enhances a connection, physically and emotionally, with the introduction of haptic memory—the recollection of memory received through the stimulus of touch, a subset of mnemonics.

The senses of smell and taste inform of the space’s use and materiality and can become overpowering very quickly. The sense of smell can also bring the purity of nature to the interior. By including natural materials, the scent will immediately envelop the subject in the recollection of the natural in a similar way that the smell of fresh rain brings a sentiment of freshness and cleanliness.

A substantial portion of contemporary architecture relies on the visual realm., therefore the visual sense can easily become overstimulated. With a strategic dethroning of the visual, the other senses are heightened, resulting in a more involved examination of the surrounding space. Darkness in particular increases the other sensual modes as it forces the decreased dependency on the visual sense.⁶⁶ The introduction of rough surfaces creates an ambiguous depth and distance as the light is continually shifting, infinitely altering the aesthetics. Though the sense of sight in this situation may not be the dominant one, the mind still projects a visual representation using the other senses as methods of analysis. They indicate the qualities perceived, then convert them into a mental image using the haptic memory. Brutalist architecture, known as the most spiritual and synesthetic era of



fig. 2.18 Arab World Institute in Paris

Source: "Arab World Institute in Paris." *Digital image. Sky Scrapper City. 2006. Accessed December 13, 2016.* <http://www.skyscrapercity.com/showthread.php?t=349394>.

architecture, is known for its use of shadows and darkness.⁶⁷

Alternatively, the over-lighting of space has become problematic as it exposes the contents of space, removing the mystery. The trend of over-lighting requires large windows to allow the natural light to come into the space. The window was used in the past with the intention of being a mediator between the inside and out, the sheltered and open, the temperate and uncontrollable; but in more modern uses, the window has become merely the "absence of a wall."⁶⁸ This tendency to create large windows has diminished the sense of intimacy in spaces and created a viewing platform.

With the body acting a gestalt, the sensual receivers collect the environmental stimulants, and

the mind creates a cohesive understanding of the surroundings. By creating connections between the senses to understand the space through a synesthetic process, it creates a more holistic perception of the space. This network creates a diverse inventory of singular stimulants—the base of mnemonics, relying on synesthesia to create connections between senses and memory. The number singular stimulators available to recall one particular memory increases the capability of an individual to recall that memory.

ARCHITECTURAL MIMESIS

Architectural mimesis requires a high-level interaction between the subject and object, as the body self-adjusts based on its environment. It is

the absorption of knowledge through embodiment. To develop an understanding of space, the body is projected on the piece of architecture to find resonance in the space with its movement, balance, and scale.⁶⁹

Mimesis is found in two forms—literal and implicit. Literal mimesis refers to a direct image in architecture which the observer replicates. Through form, the body takes on the configuration of the space through posture, sense of authority, and the structure. Through carvings, the observer attempts to replicate the narratives in their mind. Implicit mimesis involves universally understood concepts, such as ascent, the journey towards the light, and eternal vision. Implicit mimesis straddles the fine line between mimesis and architectural guidance.

Though these architectural forms are visible to all, the opportunities of mimesis are more readily embraced and recognized by those who are well versed in the architectural profession, or in the particular symbolism of the given culture.

COLLECTIVE BEHAVIOUR

While the experience of architecture is independent, there is also the possibility of the group experience of architecture—a subject perceiving the group and architecture simultaneously. In this situation, the architecture is considered to lead the dynamic regarding how a group inhabits space, but the group itself is autonomous beyond that. Within this domain, there are several concepts which affect the person. These are group mimesis, contagion of feeling, and the feeling of belonging. The power of collective behaviour is based in the contagious quality of the experience of emotional and spiritual states.

Mimesis is a relatively simple concept involving the imitation of characteristics based on another person, whether they be physical or

behavioural. Aforementioned, infants use the practice of mimesis to gain bodily knowledge through the observation of their mother and registering which actions are similar to the ones they produce. The infant holds a sacred connection with the mother and provides infinite trust, therefore absorbing each new movement pedagogically.

In a collective, mimesis works in a similar manner, where the individual has the potential to be overtaken by the crowd mentality and be subjected to the actions which come along with it. This mimesis could be positively applied in a learning environment, or negatively applied in situations involving hatred and violence.

Overly stimulated senses create the contagion of feeling, which stimulates a similar emotional response in an observer. In particular, sound plays an important part in regards to crowds. For example, in the immensity of an audience, alone in the silence of anticipation as an artist sings the final note of their performance with thousands of eyes on them, when suddenly the roar of the applause erupts, breaking the tension of the silence, and releasing into the relaxation of joy and satisfaction.

Pallasmaa provides examples of the feeling of belonging through the sense of sound. In entering a church, the song of the organ fills the room and overtakes the ears of the guests with emotional notes. The receipt of the notes along with the rest of the ears in the crowd involves the individual into a group of people who are momentarily experiencing similar things.⁷⁰

When used in conjunction with each other, the strategies increase the potential for affective experiences in a piece of architecture.



fig. 2.19 Villa Malaparte demonstrating Architectural Mimesis

Source: Tamagnini, Luca. "Villa Malaparte." Digital image. Things I Like Today. Accessed January 27, 2018. <https://www.thingsilike-today.com/villa-malaparte-capri/>.



fig. 2.20 Ritual - Meditation
Source: Author's own image



fig. 2.23 Ritual - Circumambulation
Source: Author's own image



fig. 2.21 Ritual - Material offering
Source: Author's own image



fig. 2.24 Ritual - Prostration
Source: Author's own image



fig. 2.22 Ritual - Light offering
Source: Author's own image



fig. 2.25 Ritual - Chanting
Source: Author's own image

BUDDHIST PRACTICES

Buddhist monks spend their entire lives investigating the nature of mind. The “Three Marks of Existence” are observed as a the base for Buddhist belief. They consist of *impermanence*, *suffering*, and *non-permanent self*. *Impermanence* is the concept that everything is ultimately ever-changing and impermanent, whether it be the physical, or mental. One cannot rely on any physical things to maintain happiness, emotions cannot be sustained, and the physical body cannot be preserved infinitely. *Suffering* is the second Mark of Existence; the self in the impermanent material world is bound to suffer. The third Mark of Existence is the *non-permanent self*—the five forms by which humans identify themselves. These forms are the physical (*rupa*), feelings or sensations (*vedana*), perception (*sanna*), mental formations (*sankhara*), and consciousness (*vinnana*).⁷² These only represent the momentary self, not the base essence of self. As the Buddha said, all conditioned things are impermanent.

With rituals addressing the positions of standing, sitting, lying down and walking, Buddhism becomes a extensive practice embedded into the daily lives of its practitioners. The rituals upon which Buddhists base their practice revolve around the ancient concept of mindfulness.

Mindfulness focuses one’s attention. Through the practice of mindfulness, one hopes to be fully present, sometimes referred to as “mental activation and alertness.”⁷¹ It is developed through meditation, activates the practices and can be applied to any act, daily activity, and ritual.

This concept of mindfulness carries through the rituals of Buddhism—meditation, chanting,

prostration, circumambulation, and offerings. These five rituals were chosen as they were observed during the excursion to the Borobudur. The practices usually take place simultaneously or in succession to reach their full effect, and though they are effective momentarily while the practitioner is actively engaged in them, to be able to acquire long-lasting effects, they are required to take part in these practices over an extended period. Monks usually dedicate their lives to the observance of Buddhist rituals, practicing throughout the majority of each day.

The Buddhist rituals range from engaging space, body, mind, and consciousness, to only the engagement of the mind and consciousness. Those who engage the space do so through the movement of the body with the guidance of the temple and attempt to create a synchronization of the body, speech and mind.



fig. 2.26 Meditation
Source: Author generated image

MEDITATING

Meditating is the skillful practice of investigating the nature of mind. Meditations usually begin by setting an intention to be carried through the practice, and in time building up stability in order to apply the developed mindfulness towards the daily life. There are two types of meditation in which a practitioner can engage; the first is Samatha, meaning tranquillity, and is single point meditation by engaging the breath. The second is called Vipassana and is the most common method of meditation. Translated literally, Vipassana means “clear-seeing,” as its goal is to bring peace and a level of independence from

the inconsistency of everyday events. By engaging in meditation, the practitioner can foster mindfulness with which to approach their present reality.

There are meditations which focus attention towards the outer and inner objects. By directing the attention towards one object, it allows the mind to be undistracted and focus on the task of reflection of the mind consciousness.⁷³ To engage successfully in meditation, the practitioner must master three things; gladdening, concentrating and liberating. Gladdening involves “the accomplishment of the function of knowledge which cleanses by consolidating the non-excess and single nature of those states,”⁷⁴ concentrating is the undistracted mind being able to be focused on

the object of interest, and liberating involves freeing the mind from factors that keep the practitioner from achieving higher stages of meditation. The ultimate goal of meditation is to free the practitioner from the sense of permanent self.

Meditation is a method of reiterating synaptic connections to increase the reinforcement of a positive neural network.⁷⁵ A synapse is a connection between neurons to create a thought. It happens from a presynaptic neuron to a postsynaptic neuron. Action potential runs down neuron axon activating potassium, sodium channels, and the voltage-gated calcium channels which then open the gates to release calcium into the cytoplasm. Calcium ions cause the synaptic vesicles to purge the chemical messengers which act like neurotransmitters and travel across the synaptic cleft, binding to receptor sites on the postsynaptic neuron. The signal is then converted from chemical to electrical then back into a chemical to be received and become action potential again. Neurons become either excited or inhibited, depending on which neurotransmitters bond. Excited neurons go through a process of depolarization making them more positive inside and raising its action potential, and inhibited neurons go through a process of hyper-polarization, making the neuron more negative and furthering it from the threshold needed for the action potential. Neurotransmitters stay bonded to their receptors for a few milliseconds and then are released back. Some dissolve and others are reabsorbed by the neuron.⁷⁶

To recall a memory, the original synapse which created the thought is reactivated through the same process. Deliberate meditation shows increased activity as it is a constant, conscious repetition of that synapse. Meditation is associated with more significant activity in prefrontal cortex which is responsible for the planning, personality expression, cognitive behaviour, decision making and moderating social behavior.⁷⁶

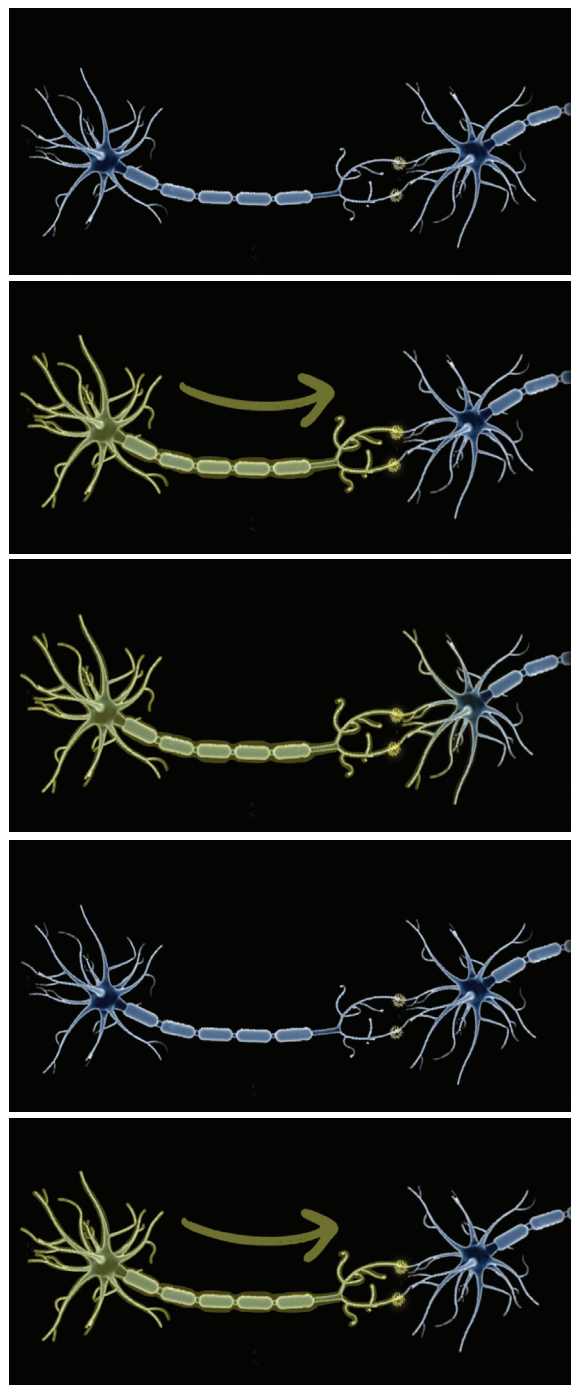


fig. 2.27 Steps to creating a memory with synapses
Source: Author generated image



fig. 2.28 Circumambulating
Source: Author generated image

CIRCUMAMBULATION

Circumambulation is the practice of circling the sacred object as an act of meditation. Circumambulation is done physically, using the body to rotate around the object, meanwhile using the mind and speech as a reinforcement. The mind should consistently think of the valued qualities of the Buddha, using the object as a reminder to return to the meditative mind, in case of deviation. While circumambulating physically and mentally, the practitioner should recite mantras which refer to the qualities upon which they are meditating. These also include praises of the Buddha. The inclusion of

chanting in the Buddhist practices is expanded upon in the Chanting section.

Circumambulating in the Buddhist practices is usually done around the Stupa as it is known to hold relics of the Buddha.

This practice engages the architecture, as it becomes the sacred object of interest on which the practitioner focuses. It engages the body as it is a physical act which requires the practitioner to be in constant, conscious movement. It also engages the mind, as an active, undistracted mind is an essential part of the meditative factor in circumambulation.

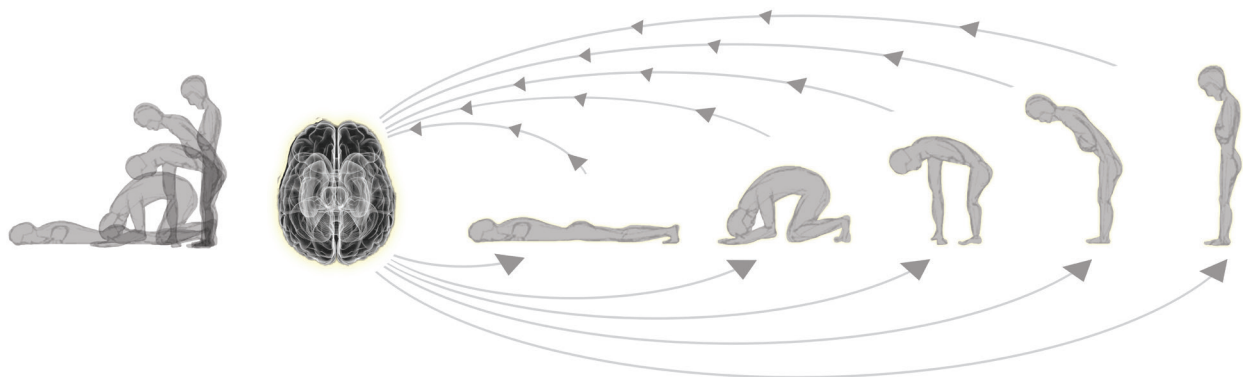
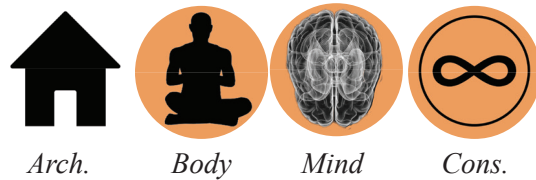


fig. 2.29 Prostrating
Source: Author generated image

PROSTRATIONS

A vast number of religions observe the practice of prostration. It is a sequence of movements, usually from standing to a kneeling position that repeats throughout the meditation.

The Buddhist method of prostrations has two variations which are used at the discretion of the practitioner. The first has five movements which range from a standing position to a fully spread position on the ground. The second variation only has four movements, from a standing position to a kneeling position with the forehead touching the ground. Practitioners engage in prostrations for several reasons,

two of which are to show respect to the deities to which they are praying, and as an act of meditation. When the practitioner is observing a prayer, the holy object is usually the point of concentration, in Buddhism, either a statue of the Buddha or a stupa containing relics of Buddha. As a meditation, the prostrations require the practitioner to pair up the physical movements with the mental concentration on the qualities of the Buddha. The repetitive movements from the sequence of the prostrations is a method to sync the brain with the body and create a unified force.

Prostrations engage the physical body, and the mind to achieve its results—at times involving an object which practitioners focus upon for meditation.

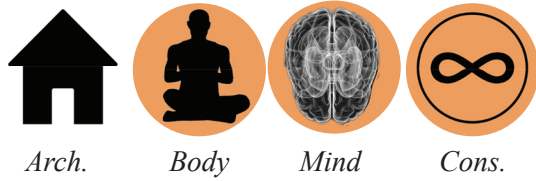


fig. 2.30 Chanting
Source: Author generated image

CHANTING

The practice of chanting can exist outwardly and inwardly, as an independent practice, or it can accompany meditation, circumambulation, or prostrations. It unites the outer and inner self; the body, speech and mind.

Chanting contains several subsets which are comprised of different meanings and uses — Sutra, Dharani, Gatha and Mantras. A sermon of the Buddha is called a Stura while a Gatha is a verse usually chanted in song. The most common chant is the Mantra, which is composed of short, meaningful syllables which are repeatedly chanted to form a

transformative power, also used during meditation. Unlike the mantra, the syllables in the Dharani chant are slightly longer, and the resulting sounds contain the “essence of a teaching.” Dharanis are a subset of Mantras.

Specifically, the syllable of ‘Om’ has been found to have significant effects. In Buddhism:

“Om [...] symbolizes the practitioner’s impure body, speech, and mind; it also symbolizes the pure exalted body, speech, and mind of a Buddha[...].”

—H.H. Tenzin Gyatso, 14th Dalai Lama



fig. 2.31 Monks Chanting

Source: Author's own image

The chanting of the Om syllable engages subtle aspects of the body relating to vibration, sending energy throughout the body. Due to the prolonged exhalations, Om chanting requires deep breaths which stimulates the parasympathetic nervous system to release a response of relaxation to the body and mind, eliminating stress in the muscles and nerves, meanwhile increasing oxygen flow through the blood.

The sounds produced by Om — A, U, M, directly relate to the states of consciousness; A is to the waking state, U is to the dreaming state, and M is to the state of deep sleep. Through the chanting of this syllable, the body becomes attuned to these different states and more readily can access them in future

situations.⁷⁷

Chanting is a ritualistic practice which equips the mind for meditation. While reciting the mantras, it is essential to be meditating on the significance of each of the syllables. For example, in the well-known mantra of 'Om Mani Pad Me Hum,' each of the syllables has a distinct meaning. Focusing on the meanings behind each of these syllables reinforces the meditation on the practice of mindfulness.

<i>OM</i>	<i>Generosity</i>
<i>MA</i>	<i>Ethics</i>
<i>NI</i>	<i>Patience</i>
<i>PAD</i>	<i>Diligence</i>
<i>ME</i>	<i>Remuneration</i>
<i>HUM</i>	<i>Wisdom</i>



fig. 2.32 Material offering
Source: Author generated image

OFFERINGS

Though the practice of offering engages the body, it is most significantly a mental ritual and comes in two forms—material offerings and immaterial offerings. The ritual of material offerings is derived from the devotion to let go of the material state and promotes the nurturing of impermanence, virtue, generosity, meanwhile honouring the Buddha. It is valid when the practitioner can offer something of their possessions which is valued. Practitioners give material offerings in sets of eight—drinking water, bathing water, flowers, incense, light, perfume, food, and music, though not all need to be present for each

round of offerings. The offering of water is provided symbolically for the benefit of all beings; bathing water brings hospitality or cleanliness, and drinking water satisfies the thirst of all beings and brings compassion. The offerings of flowers, perfume, food, and music beautify the setting of the awakened beings and benefit those who provide these offerings. Light is seen to possess a transcendental knowledge and by releasing it as an offering, can transfer that knowledge to all beings. It brings clarity to the darkness of unawareness and ignorance. Lastly, incenses burn so their smoke can carry upwards towards the heavens, and they can envelop with their scents of discipline.

Immaterial offerings come in the form of



fig. 2.33 Light offering
Source: Author generated image

offering practice, such as giving, moral conduct, meditation, and wisdom. Practitioners make material offerings to the Buddha, and immaterial offerings to any persons, including lay people.

The ritual of the offering is a highly reliant on intention. The procedure of giving of one's self requires a decision to let go of the value which is assigned to the material possessions by allowing themselves to hand them forward. The release of material possessions along with the dedication of practice to the Buddha or Bodhisattvas provides a sensation of accomplishment and devotion to the practice.

Buddhist architectures have an area in which offerings can be made; this space usually

contains either a relic of the Buddha or a statue to reiterate his presence. This repeated action adheres the received sensations to space, therefore creating a spatial association in the practitioner's memory of the experience. A recollection of the sensation will be more readily available when the practitioner is in that space.



BOROBUDUR TEMPLE





fig. 3.1 Borobudur Temple from the base of the hill

Source: Author's own image

BOROBUDUR TEMPLE

The Borobudur Temple resides in the Kedu Valley, in the southern portion of Central Java in Indonesia. It is one of the most significant and largest Buddhist monuments in the world.

HISTORICAL CONTEXT

In the last 1,200 years, Indonesia underwent many changes in its ruling dynasties—with dynasty lifespans averaging 300 years. The first documented dynasty to rule the land was Hindu, followed by Buddhist. The Buddhist Syailendra dynasty built the temple of Borobudur. The construction began between the 750CE and 842CE and took roughly 75 years to complete, which places its completion during the reign of Samaratungga. Indonesia then went through a period of no occupation from the 12th century to the 15th century, and finally, at the end of the 15th century, the Muslim dynasty took rule over the land.¹

Indonesia and the Borobudur Temple are within the “Ring of Fire”—a region in the Pacific Ocean identified by its many earthquakes and volcanic eruptions. After a significant eruption of the Merapi volcano, the temple lay under volcanic ash while the inhabitants of the land searched for new places to live. In 1814, Sir Thomas Stamford Raffles rediscovered the temple as a hill of statues, and twenty years later, the site of Borobudur was cleared of the volcanic ash and left as a pile of ruins. Nearly 140 years later, in 1973, the temple underwent restoration efforts which lead it to be one of the destinations of Buddhist pilgrimage.

For many years, Buddhist from around the world travelled to Borobudur to experience its spiritual value. In 1991, the temple was officially declared a

World Heritage Site as a Buddhist archaeological site with Outstanding Universal Value by UNESCO. According to UNESCO:

“CRITERION (I): Borobudur Temple Compounds with its stepped, unroofed pyramid consisting of ten superimposing terraces, crowned by a large bell-shaped dome is a harmonious marriage of stupas, temple and mountain that is a masterpiece of Buddhist architecture and monumental arts.

CRITERION (II): Borobudur Temple Compounds is an outstanding example of Indonesia’s art and architecture from between the early 8th and late 9th centuries that exerted considerable influence on an architectural revival between the mid-13th and early 16th centuries.

CRITERION (VI): Laid out in the form of a lotus, the sacred flower of Buddha, Borobudur Temple Compounds is an exceptional reflection of a blending of the very central idea of indigenous ancestor worship and the Buddhist concept of attaining Nirvana. The ten mounting terraces of the entire structure correspond to the successive stages that the Bodhisattva has to achieve before attaining to Buddhahood.”²

PHYSICAL CONTEXT

Though many people visit this area, it has not always safe to do so. Due to its location in the Ring of Fire, this area has experienced quite a few devastating events. With volcanoes immediately surrounding Borobudur, the area is in a constant state of awareness. The most recent eruption of the Merapi Volcano in 2010 left 320,000 people displaced, and 140 deceased.



*fig. 3.2 Ring of Fire; each orange dot is a volcano
Source: Author generated image*

Events of this kind, as well as earthquakes resulting from the volcanic activity, often happen due to the number of volcanoes, and their proximity to each other. Volcanic ash covers the temple with each eruption, and the town suspends practices until conditions become safe for people to inhabit the area.

As Indonesia resides within the Ring of Fire, the presence of volcanoes impacts its architecture on several levels. The province of Java is known as the ‘magnet of the world’ due to the amount of magnetic energy of the lava from the volcanoes.³ Spiritually, Indonesian Buddhists temples between a volcano and a body of water. This placement provides the temple with fire energy from the volcano and the water energy from the body of water. The temple is constructed from the volcanic rock from the nearby volcano.

The area surrounding Borobudur is home to around 20 small villages. Many of the people of these villages use either traditional farming methods to make their livelihoods, or are employed by a branch of tourism as guides or hosts of home-stays.

SOCIAL CONTEXT

The overwhelming majority of the economy for the region of Borobudur comes from tourism, with an average of 2.5 million visitors annually. As of 1995, only 20% of the tourists were foreign, 80% domestic.⁴ With such a reliance on the Borobudur Temple to bring in tourists, every village contains a government mandated central plaza. They are open-air covered platforms with zones for relaxation, dancing, and food. Alongside these cafe type spaces, the government requires the villages to have a series of home-stays to strengthen the economy. These zones are highly populated during the times of festivals in Borobudur area.⁵

The Borobudur Temple is most famously known for hosting the Waisak Festival. Annually, this event brings in thousands of tourists, as well as monks. It is held on the day of the first full moon in May and celebrates the birth, enlightenment, and death of Buddha Siddharta Gautama. The festival incorporates the rituals of Buddhism such as circumambulation, prostrations and chants. The rituals begin at the Mendut Temple, followed by a three-kilometre procession to the Borobudur Temple on a path winding through the several villages. The towns in this region contain an overwhelmingly Muslim population, resulting in an exciting dynamic between the procession of Buddhists and the Muslim towns. To engage the crowd, the head of the procession maintains a party atmosphere, while towards the end, the monks follow in a solitary promenade. Though a difference in religious beliefs, both the procession and the receiving towns show mutual respect towards each other. The procession comes to an end when the group finally reaches the Borobudur Temple where the rituals begin—circumambulation, chanting, and offerings. Later in the night, the populations of neighbouring towns gather

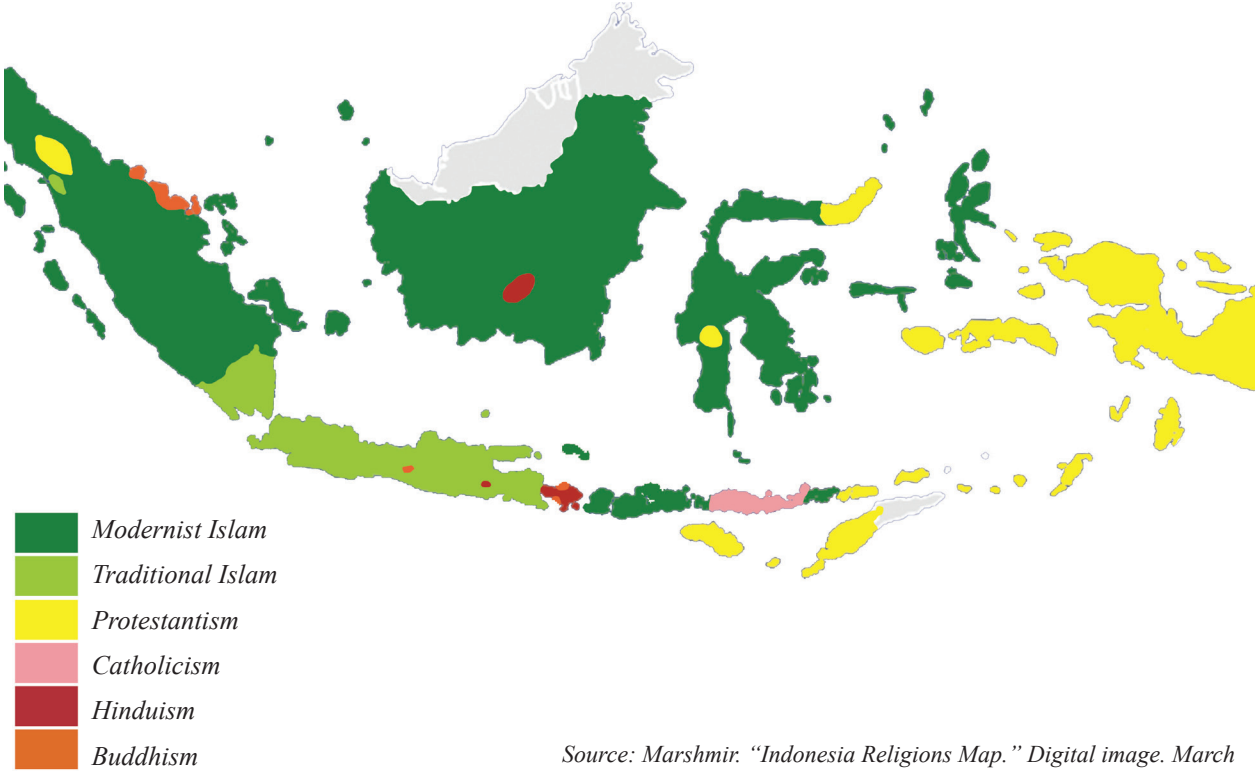


fig. 3.3 Religious Distribution on Indonesia

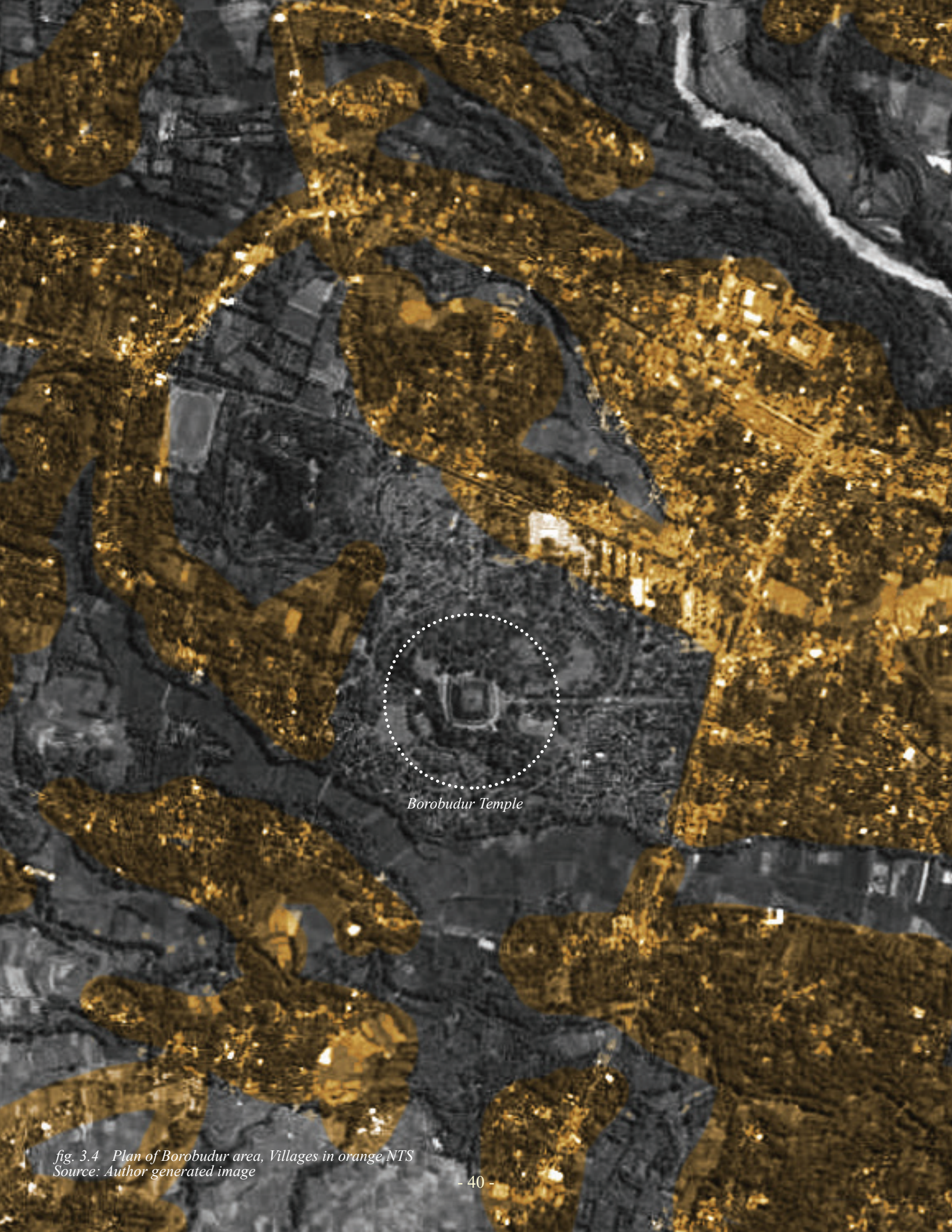
Source: Marshmir. "Indonesia Religions Map." Digital image. March 11, 2011. https://en.wikipedia.org/wiki/Religion_in_Indonesia#/media/File:Religious_map_of_Indonesia.jpg.

in the west field of the temple ground for the lantern release. This portion of the festival attracts thousands of people, despite their religion. This emotional event can affect any person. The lantern release happens several times, with instructions and the first release led by the monks. The Waisak Festival's excitement lasts for several days as the attendees share experiences and photos through social media and in person.

The temple of Borobudur has the unique circumstance of being a Buddhist artefact situated in a Muslim landscape. The interplay of religions and cultural differences seems to reinforce the spiritual atmosphere in some instances, but create tensions in others.

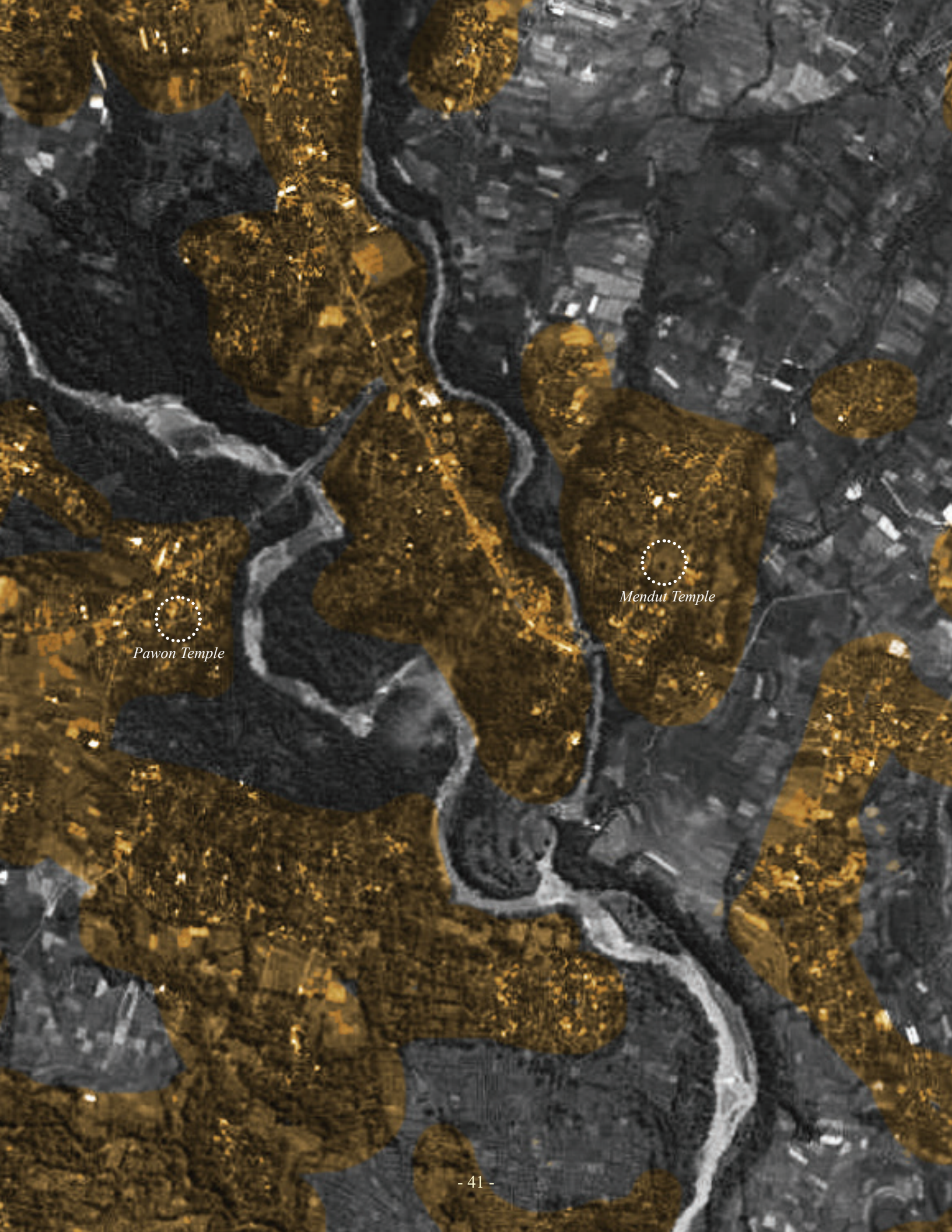
The cultural and religious difference is not the only division which alters the experience at the

temple, but the intention of the surrounding visitors does as well. During festivities, a significant number of monks are present who partake in rituals alongside journalists, photographers, and tourists. The spiritual atmosphere thins through each flash of the camera and with each whisper during the silent moments of meditation. Besides the wondrous sight of an ocean of orange robes during the time of the Waisak Festival, Indonesia is home to only 2,500 Buddhists and witnessing them practice is entertaining to the public and media—though this local attention may be distracting to the monks themselves. Repeatedly, the media made their way into the celebrations and rituals held at the Borobudur Temple, lacking any respect towards the practitioners.



Borobudur Temple

*fig. 3.4 Plan of Borobudur area, Villages in orange, NTS
Source: Author generated image*



Pawon Temple

Mendut Temple



fig. 3.5 Borobudur: Section NTS
Source: Author generated image



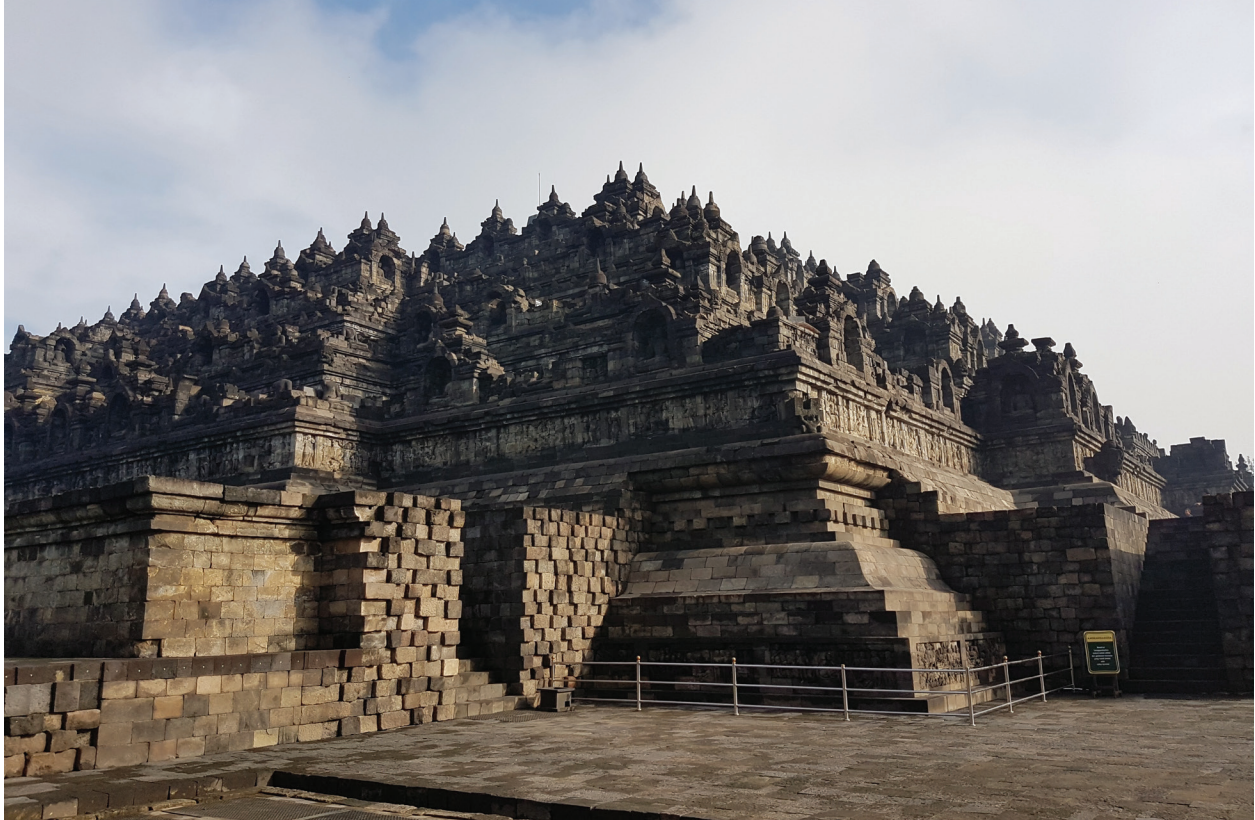


fig. 3.6 Borobudur Temple as seen from the base

Source: Author's own image

BOROBUDUR TEMPLE

Standing 34.5m tall, with a base that measures 123m x 123m, Borobudur is the largest Buddhist monument in the world. With more than 60,000 m³ of stone structure, the temple is built upon a mound of earth, acting as a shrine to the supposed Buddha relics buried within it, following the traditional function of stupas. Stupas are the original type of Buddhist architecture. The first Buddha was cremated after his death, and the ashes placed in a mound at a crossroads for the pilgrims to have access to him, as a shrine. Soon after, the ashes were distributed between eight different mounds, which became stupas—shrines containing the relics of Buddha. Typical stupas are solid on the interior, as they are a built mound,

combining bricks laid in earth making up the core of the stupa. There is a gate enclosing the stupa and a mast emerging from the top of the stupa acting as the cosmic axis. Stupas come in a variety of sizes and can serve as a standalone building or a focus of practice in another type of Buddhist architecture—Borobudur is both.

The structure of the temple consists of ten platforms—the bottom six are square and take the form of galleries filled with Buddha statues. The walls of the galleries are lined in 2,672 relief panels telling the story of Buddha. The next three platforms are circular, acting as a stage for 72 stupas, each in the form of a bell, with a hollow interior and housing a Buddha statues. The last level is the central stupa which is believed to contain the unfinished Buddha

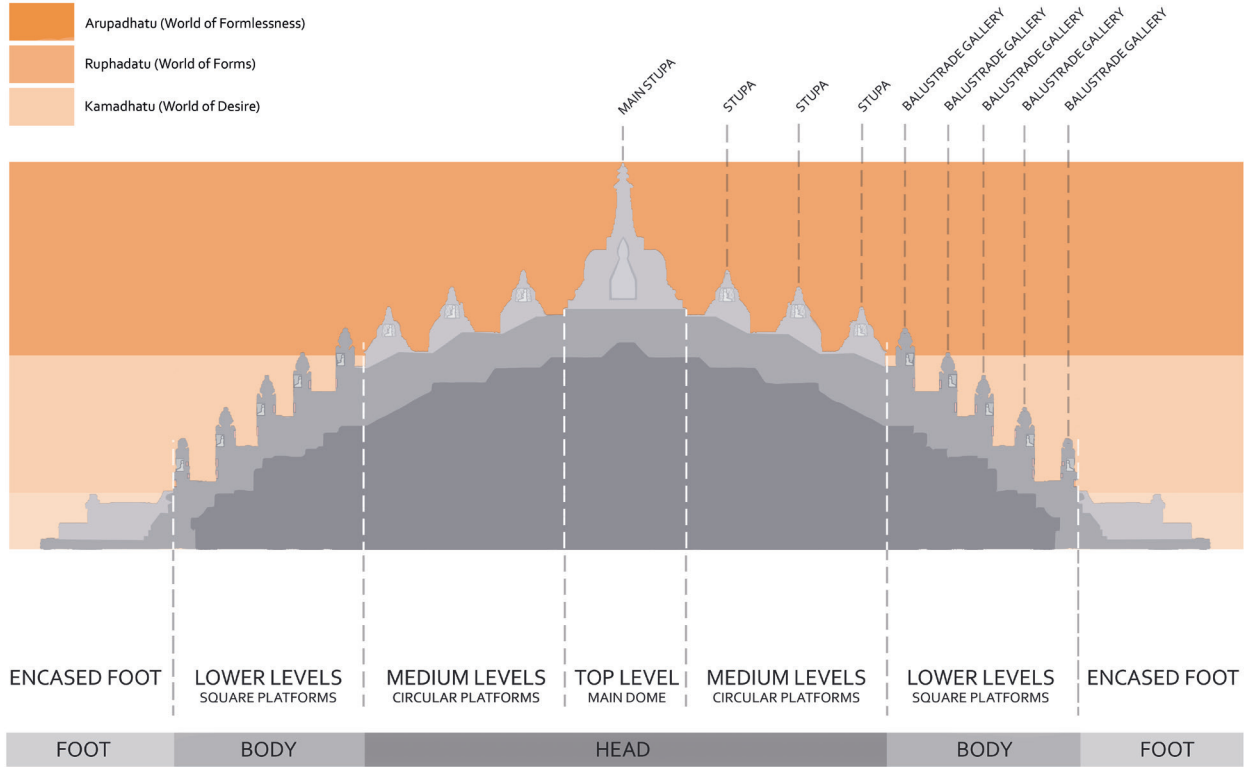


fig. 3.7 Borobudur Temple symbolic significance NTS

Source: Author's own image

statue. The entire structure of Borobudur is home to 504 Buddha statues.⁶

From the top central stupa, four sets of staircases facing the cardinal directions, descend to the temple grounds. The stairs provide access to each of the platforms and have a decorated gate to mark the threshold of entering a new level. The Director of Conservation of the Borobudur Temple indicated that the temple is to be ascended from the eastern staircase and descended in the north, but this is an adjustment from the original intended use which required practitioners to both ascend and descend in the east. The original process moved in response to the sun's movement, as it rises in the east—a full rotation around the temple's platform represents a new day and a new beginning. The adjustment is due to the overuse

and crowding of the eastern staircase.

The directional-based movement on the staircases is not the only symbolically important element of Borobudur. It is known as the Buddhist textbook as the temple walls are lined with reliefs from the life of Buddha Shakyamuni and the teachings associated with it—to follow the entire story, one must walk more than three kilometres. It stands as a representation piece of architecture, and visually resembles a three-dimensional mandala. As the Buddhist cosmology divides the universe into three levels, Kamadhatu (desire), Rupadatu (forms), and Arupadhatu (formlessness), the Borobudur temple divides into three corresponding levels. These contain nine platforms—the base, symbolizing the foot, the six square platforms containing balustrade galleries are

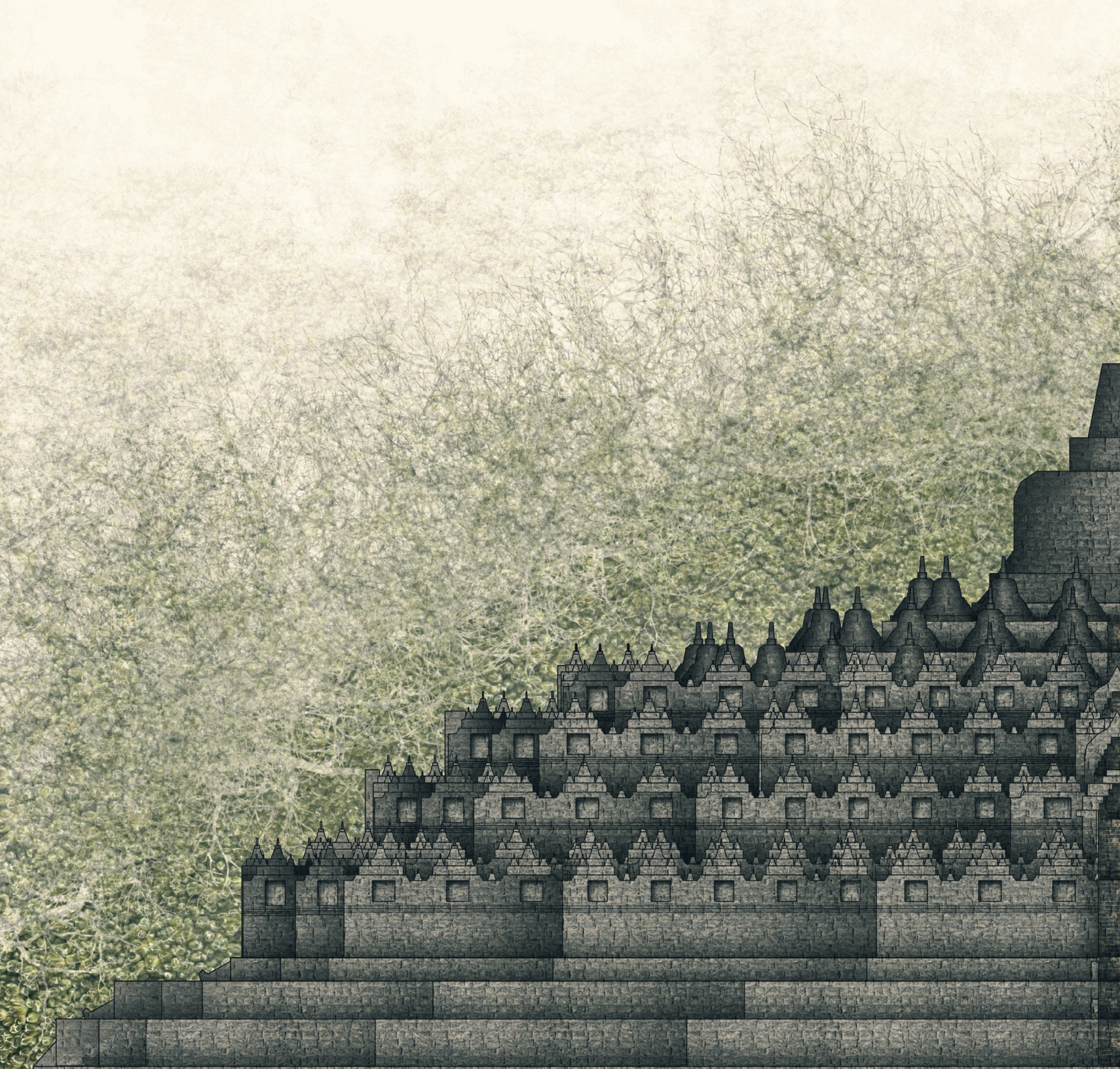
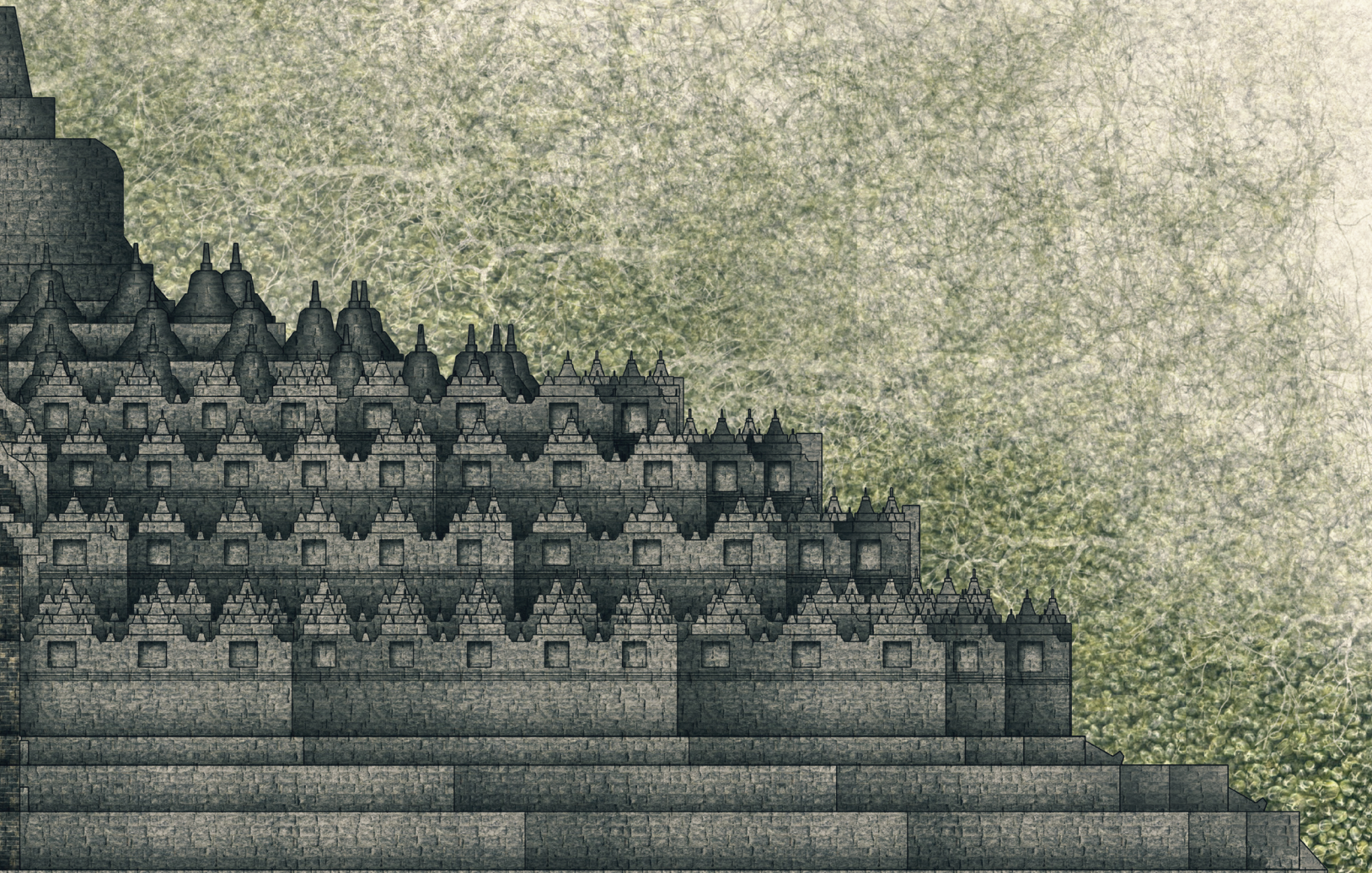


fig. 3.8 Borobudur Elevation NTS
Source: Author generated image



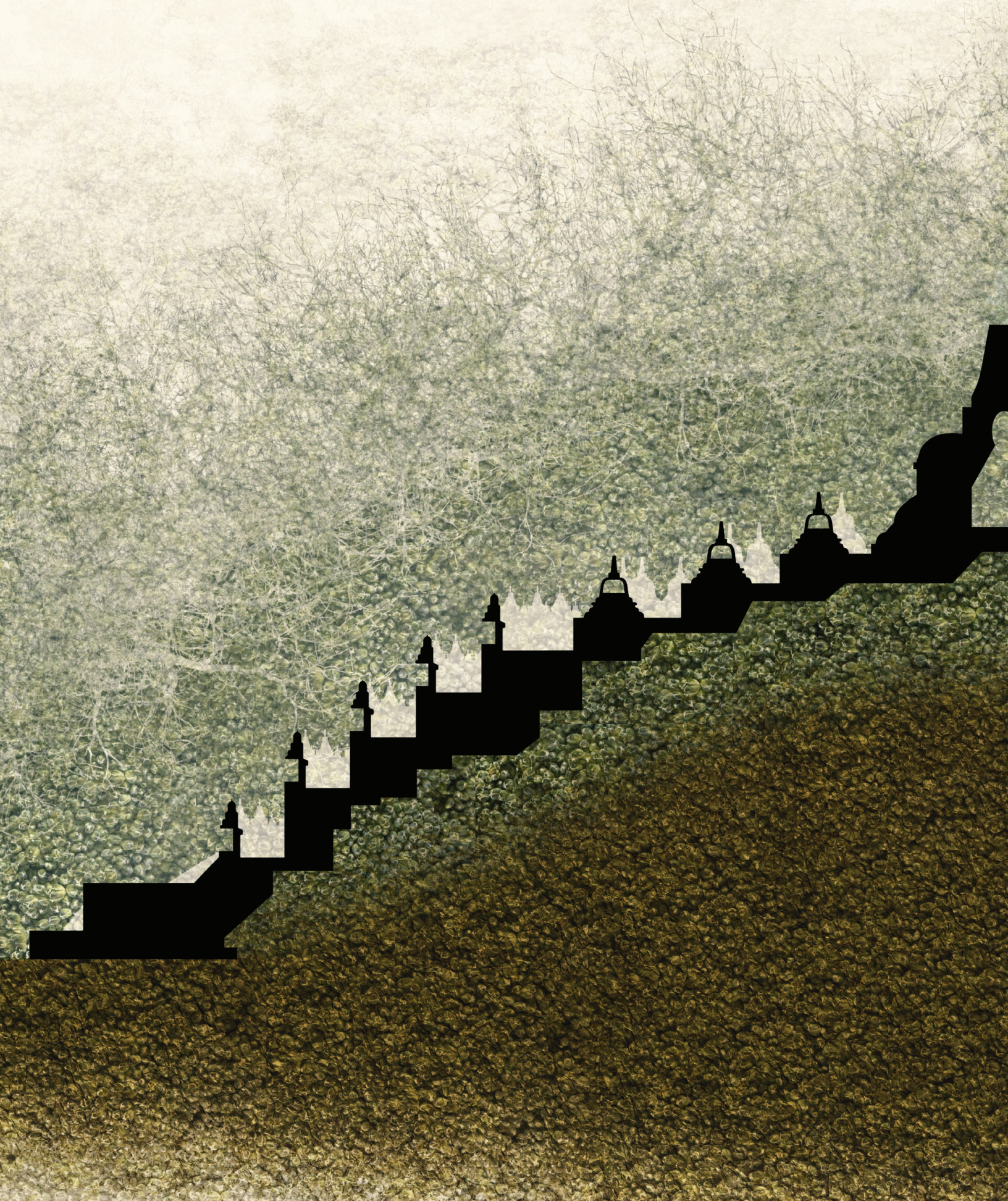


fig. 3.9 Borobudur Section NTS
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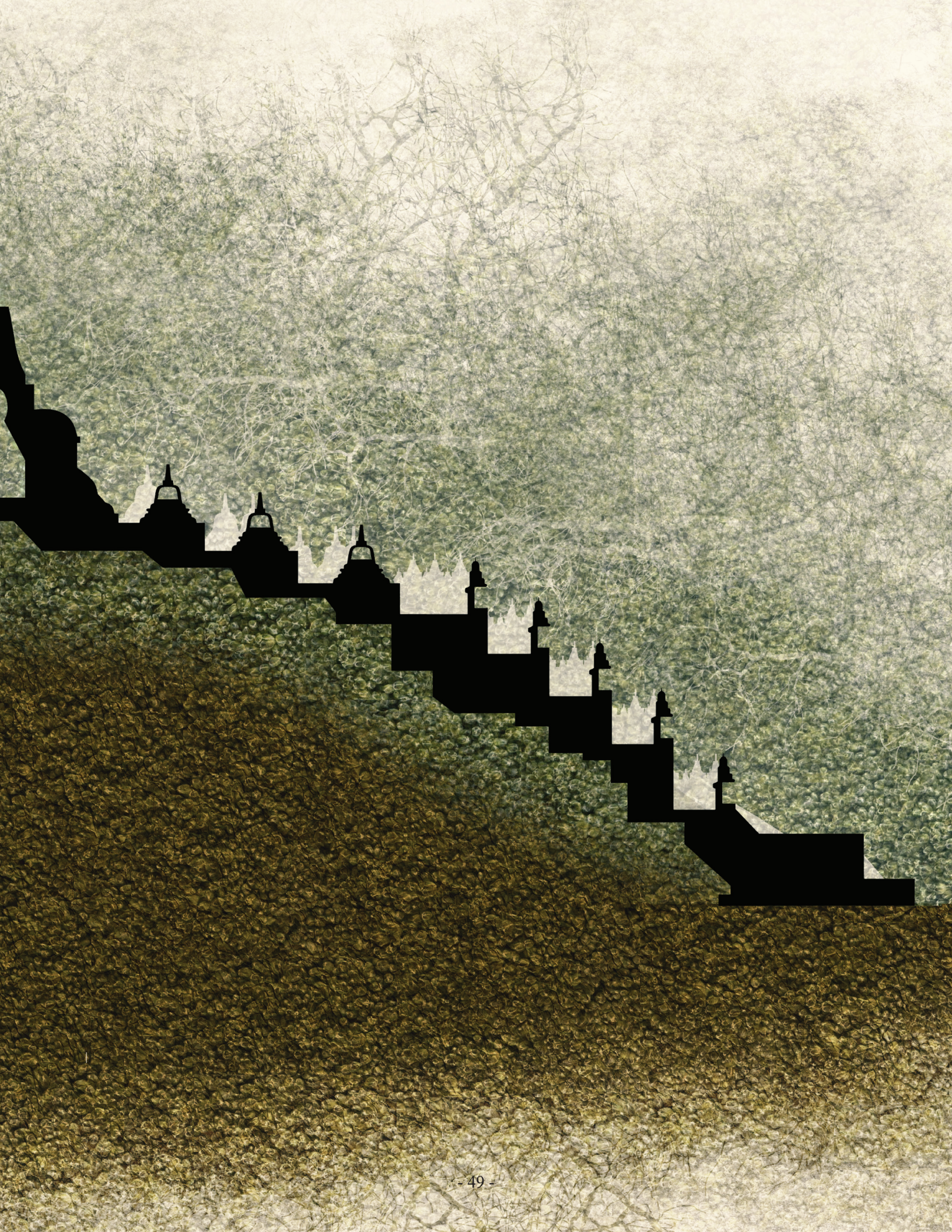




fig. 3.11 Borobudur Galleries
Source: Author generated image



fig. 3.12 Borobudur Galleries
Source: Author generated image



fig. 3.10 Borobudur Stupas
Source: Author generated image

the body, and the three circular platforms containing small stupas and the central stupa are the head.

The base level of Kamadhatu shows 117 panels which depict the world of passion and the laws of karma, demonstrating that different actions lead to corresponding results. The level of Rupadhatu depicts the life of Siddhartha Gautama, the Buddha, from his childhood as a prince to his reaching of the highest level of enlightenment. The following 460 panels depict the scenes based on the Mahayana text Gandavyuha. The circular top level of Arupadhatu stands for the formless world, as it has no beginning or end, it is a pure and tranquil state.

According to Borobudur researcher, Bedřich Forman, the religion of Buddhism has changed dramatically since its invention, as well as since Borobudur was created.⁷ With so much adapted culture and religion brought from India, Indonesia had established its own culturally influenced version of Buddhism, which was then adapted into the creation of Borobudur, “one of the greatest peaks of the world art.”⁸

In Indonesian Buddhism, it is common for each temple to represent a volcano—Borobudur is the temple of the Merapi Volcano and thus is constructed from its volcanic rock. Forman also describes the original landscape that Borobudur became a part of, the original intention being that Borobudur acted as a lotus floating on water, simulating the “earth resting upon the surface of the water” with the universe revolving around it.⁹ Borobudur was built on a hill as to perch above the surrounding river. The direct translation of Borobudur is “Temple on the Hill.”

From the exterior of the temple to the interior, the temple routinely engages nature. The galleries show natural elements as a part of their carvings, to substitute for the blocked view of nature from beyond the walls of Borobudur. By doing this, the architects

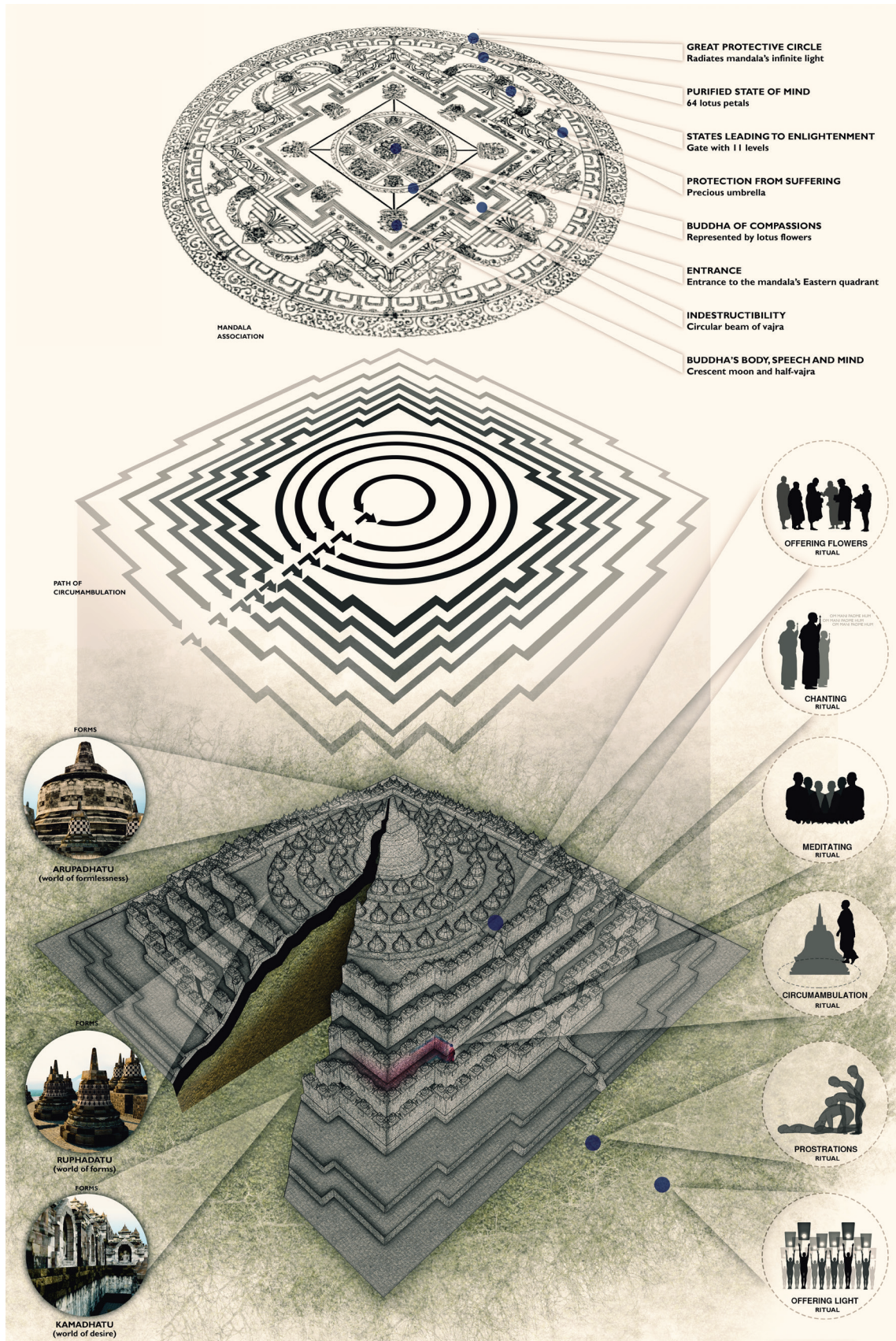


fig. 3.13 Borobudur symbolism, practices, forms and circulation

Source: Author generated image

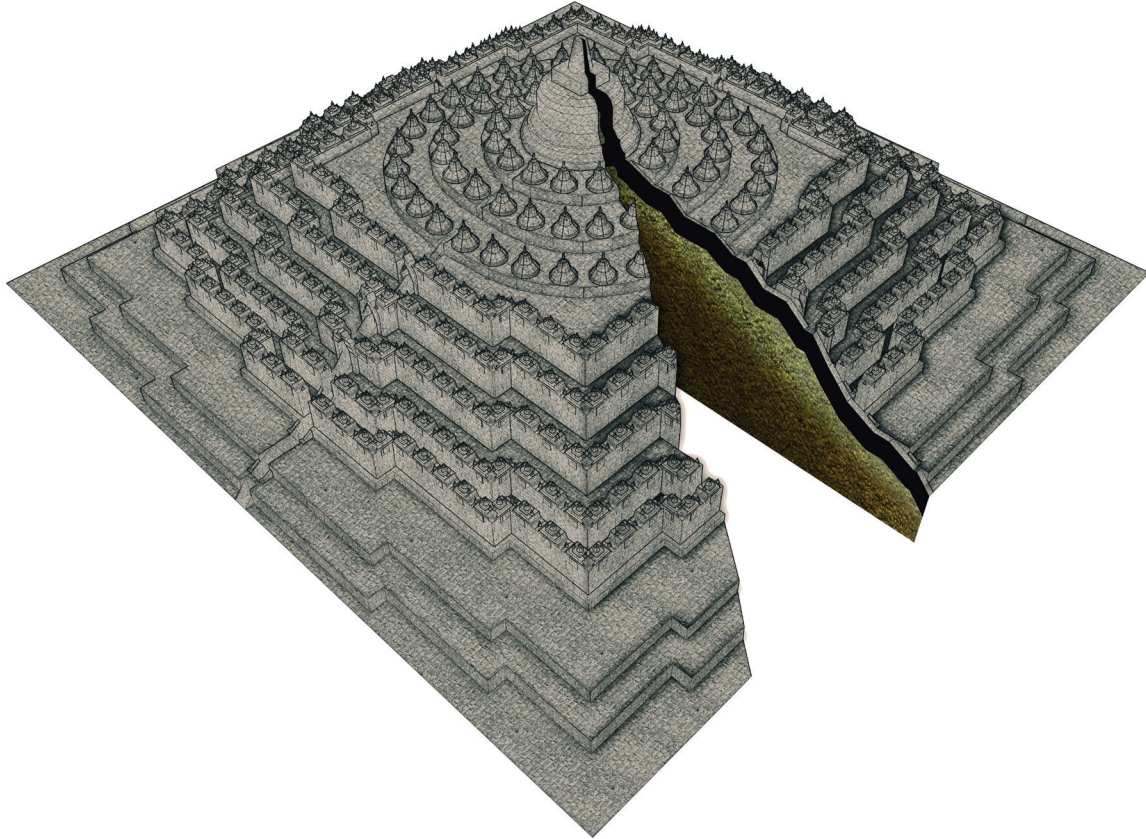


fig. 3.14 Borobudur Section cut to expose structure NTS

Source: Author generated image

of the temple allow the practitioner to engage with the environment on a different level, where they must actively provide the reference to it, as opposed to passively seeing it. This act creates a “feeling of liberation and clarification” in the lower levels so that when the practitioner reaches the final platform, it allows them to experience real nature differently.¹⁰

Another architectural element which the temple uses to manipulate the perception of the user is the path. The winding paths of Borobudur are to act as a labyrinth, causing the practitioner to encounter walls and corners constantly. Though it is not directly comparable to a labyrinth in its complexity of way-finding, the design of Borobudur has the practitioner participating in a jagged circling path through the building. This circular motion is meant to represent

eternity uniting the practitioner with their eternal body.¹¹ As they continue to walk through the galleries, they eventually reach the upper platform which unites the circular stupa levels with the square galleries. This platform is square on the exterior and circular on the interior with no carvings. It provides an opening effect into the “serene atmosphere of the plateau,” as this moment of transition filled with “supreme relaxation and spiritual delight.”¹² This shift from a circle to a square mirrors the transition from the galleries to the platforms. The 72 stupas on the circular platforms use this transition as the upper podiums of the stupas change from square to octagon, to circle. This shift represents the journey to “infinity and boundlessness.”¹³

As the user ascends the platforms, the temple incorporates cues within its architecture

as subtle way-finding elements. The gateways contain “angular connections” which guide the user towards the clockwise direction.¹⁴ The clockwise circumambulation of a space indicates rituals of resurrection, whereas revolving in the opposite direction indicates rituals of death.¹⁵ Practitioners circulate in a circular path, as it is a symbol of “endlessness, eternity, perfection and totality”.¹⁶ This constant flow throughout the space is due to the temple’s “terraced enclosures” which seem to invite the practitioner to continue “through a passage, up a flight of steps, along a succession of interconnected rooms.”¹⁷ This makes the galleries of Borobudur a dynamic, flowing space,¹⁸ and the journey through the temple begins to act as “a three-dimensional system of passages.”¹⁹

Once ascended past the levels of the gallery, the practitioner reaches the stupa platforms. The original forms of the stupas were created based on the Buddha’s practice, and the three pieces; the base, hemisphere and the pinnacle. They are made to resemble a spherical bowl atop his folded habit, topped by a staff.²⁰ Each stupa is built around the same concept, and though each of them is a singular object, they do work as a network. With 72 stupas on the platform levels, the multitude speaks to the totality of stupas. One represents the idea of the stupa, just as the idea of stupas represents the singular concept.²¹

With so many rituals to participate in during the ascent of the temple, one might think that the journey is over once the practitioner reaches the top, but in reality, the descent from the central stupa completes the journey. The “staircases often represent a point of connection between the heavens and earth.”²² The gallery levels of the temple aim to teach the Buddhists about the dharma and incorporating it into their lives, the terraces provide a space for reflection and active practice, and the staircases allow for the reiteration

of the practitioner’s inclusion in the Buddhist field. It also reiterates their responsibility in the distribution of this newly acquired knowledge.

Though the temple provides an air of being pristine and put together, since the restoration, the constant use has taken its toll. The high volume of visitors caused severe erosion out on the stone of the north and east stairs, which motivated the Department of Conservation to have them covered with wooden risers to prevent further damage. This trend continues as half of the stones are severely worn down.

BOROBUDUR AS SACRED ARCHITECTURE

As a sacred architecture, Borobudur is a prime example. It exemplifies the characteristics of a man-made mountain with its incredible size in comparison to the practitioner, conveying a grandeur associated with the supernatural. The temple’s centralized plan is evident. The enclosures and halls are reiterated in each of the platforms harmoniously. Each level contains a portion that acts as an enclosure—the tall wall on the exterior side, containing a gate on each face of the temple. The hall is the pathway itself, acting as an open-air, internal space, subdivided by the zig-zagging walls into smaller sections. Together, the enclosure and the hall act to conceal the experience to a personal scale. Borobudur is an amalgamation of platforms and entrances, the fifth and final element of sacred architecture. The higher and more central the practitioner is, the farther along on the journey they are, meaning the ten platforms must be ascended to reach the central point of enlightenment, the central stupa.



EXPERIENCE OF BOROBUDUR





fig. 4.1 Monks Circumambulating around the Mendut Temple

Source: Author's own image

THE EXPERIENCE OF BOROBUDUR; SEVEN JOURNEYS

This study involves seven journeys which are experiences analyzing the impact of the architecture on me through my spiritual pilgrimage among the temples of Indonesia.

The indented, italicized portions of text are to be read as my first-hand narrative of the experiences at Borobudur. The text that is to follow each italicized section is my analysis of the experience based on my research of affect and sacred architecture, specifically observing phenomenology, proprioception, synesthesia, mimesis and collective behaviour. These strategies is identified at the beginning of each journey. The circled strategies are engaged in that respective journey.

AFFECTIVE STRATEGIES

- (PH) *Phenomenology*
- (PR) *Proprioception*
- (S) *Synesthesia*
- (M) *Mimesis*
- (CB) *Collective Behaviour*

The experiences take place at the Borobudur Temple and the Waisak Festival, respectively. The journeys relating to the Borobudur Temple explain the progression from my initial introduction to the temple at night to ascending towards the top and are separated into the different sections of the temple; *A Temple in Darkness, Approaching the Temple, Walking the Galleries, The Reflection Platform, The Stupa Platform, and Descending the Temple*. They are

followed by a detailed narrative of my experience at the Waisak Festival which begins at the Mendut Temple and progresses towards the Borobudur Temple. The journeys are in chronological order.

JOURNEYS

- A Temple in Darkness*
- Approaching the Temple*
- Walking the Galleries*
- The Reflection Platform*
- The Stupa Platform*
- Descending the Temple*
- Waisak Festival*

An insight of the sentiments and personal connections created through these experiences assist in a sympathetic understanding of the perceptions of the Borobudur Temple. An extended series of experiences are available in Appendix C on page 140.

A TEMPLE IN DARKNESS



fig. 4.2 Eastern facade of the Borobudur Temple at night

Source: Author's own image

A blanket of deafening fog covers the Indonesian landscape as we awake. Through the haze, the 4:30 am call to prayer can be heard singing from the village mosque faintly, yet distinctively. Swiftly, we depart towards Borobudur with our driver. The singing becomes louder until we pass the mosque and quickly leave the song behind. As we travel past the villages, the songs can be heard emanating from each mosque, brighter and louder, then fading off again into the distance, sometimes overlapping.

At 5:00 am we arrive at Borobudur. Our host, Nurudin, hands us entry passes and two small flashlights, and we begin on our walk towards the temple, passing through the gardens.

With so much anticipation for this moment over the past several months, I feel the hairs raise on my arm and chills down my spine as we begin the walk. In the darkness, lights shoot up from behind the trees, unmasking their forms, and the beams from the flashlights play on the different surfaces of the path and greenery.

We begin to ascend a series of stairs. It seems as though we are at an airport as we get searched at each point of the path; at the office, at the start of the trail, and again upon entering the hill. As we rise up the stairs in the darkness, all of a sudden it hits me, the vision of the dimly lit temple in front of me. Layered, jagged and massive, each level which raises the temple taller; sinks me lower into the ground. The



fig. 4.3 Buddha silhouettes during the night

Source: Author's own image

presence of the temple has an undeniable sense of authority and purpose—it belongs here, and I am its guest. I am humbled. Feeling small, I begin walking towards it, the steps covered in wooden platforms and reaching up to my knee. Climbing up takes all my attention. As we start the climb, Nurudin takes us off the standard route and brings us into one of the galleries.

As soon as I step into the long, tunnel-like gallery, I feel like I am not alone. I sense the eyes of the many statues gaze upon me. Their faces are in darkness, but the size of the walls and the winding trails urge me to go forward. As I make my way through, my physical body begins to shrink in comparison to the temple's large size, while my spirit outgrows my body

to fit into the temple around me. I am timid to explore, but overtaken by this new sensation and surprising comfort in this dark, unknown place.

The night hides the carvings and statues of the temple and reduces them to forms. As I stand among them, the air feels crisper, though warm and humid, and the stark contrast between temple and sky brings clarity and sharpness to everything around me.

My eyes are forced to adjust to the lack of light, and what was once a sea of colour during the day, turns to shades of grey in the midst of dawn. I feel the roughness of the walls in my palms from the scattered shadows on the surface of the stone. The starkness of the air



fig. 4.4 Stupas of the Borobudur Temple at night

Source: Author's own image

in combination with the rugged walls and monotone colour scheme have me naively experiencing my surroundings, as if for the first time.

As we walked around to the gate of the west side, we ascended the stairs, unable to see beyond until the last step. The abundance of latticed stupas appears before us, protecting the grand stupa behind them.

The stillness and silence of the temple do not last long, as we ascended to the second last step of the stupas to find many tourists waiting for the sunrise—each with a camera in hand, sitting on the platforms and stupas.

Encompassed in the darkness, the temple maintains its air of mystery. We walk towards

the East face and find a space to claim for ourselves. With a view of the Merapi volcano and the mountain range in the background, the fog slowly builds upwards, blocking any vision beyond our platform. We sit waiting for the sunrise while whirls of fog begin to play around the tops of the stupas, like a warm breath on a cold winter day. The silence and anticipation of the sunrise can be felt amongst the impatient tourists. With the fog still opaque, the sky beyond begins to lighten with the rising of the sun. The birds of the morning start to overtake the silence. The temple comes to life before our eyes, the lattices of the stupas surface along with the texture of the volcanic rock, and the birds' song intensify. The temple



fig. 4.5 People waiting for the sunrise at the Borobudur Temple

Source: Author's own image

has awakened from its peaceful sleep.

ANALYSIS

Through the many typologies of Buddhist temples, the element of symbolism remains prominent, and Borobudur is no exception. With the many carvings and statues of the temple, it is evidently more spectacular during the day, when the teachings are most clearly visible. However, regardless of the time of visitation, the temple leaves a lasting impression.

Practitioners follow the long path from the entrance of the grounds with no indication of the monument for several minutes, walking alongside others with the same desire to experience the temple. This path acts

as an elongated threshold, expanding the aura of the temple beyond its walls.

Once the practitioner reaches the final stair at the top of the hill, the first sight of the Borobudur Temple appears before them. With lights shining from the base of each side and the centre in darkness, the entire length of the facade commands attention. The face of the temple reaches so far to each side of the practitioner's gaze that the construction requires movement to both the left and right to view the entire facade. This is the first motion which engages the practitioner to perceive the temple actively. The contrast in the height of the temple with the visitors also creates a shrinking feeling among the people standing at its base. This sensation usually results in a



fig. 4.6 Borobudur Staircase Modification

Source: Author's own image

humbling effect, similar to the feeling of intimidation. This shrinking sentiment is referred to as Alice in Wonderland Syndrome where there is a shift in perception of the surrounding environment causing size distortion.¹

As the practitioner begins towards the temple, the stairs stand tall and require attentiveness to step to the appropriate height. The use of taller stairs in combination with shorter stairs was common in Medieval castles. Unusual stair heights slowed down any attackers that the castle may have, as they would be unfamiliar with the uneven stairs and would usually trip.² The use of taller stairs is a method employed by the architect to bring attention to the movement within the temple. The deliberate change in position

also allows the body to subconsciously associate the vision, and emotions with that action, especially when repeated at each new level of the temple.

Once ascended into one of the levels of the temple, the practitioner is confronted with the statues in shadow above their line of vision. In the darkness, the experience is no longer driven by the intricate visual manipulation of the stone but expands the palate of senses. A hypersensitivity of the other senses emerges from the diminished reliance on the visual allowing the experience of the space to become centred around its form and presence. This shifts the perception from the intentions of its religious creation to its pure form. With the lack of light, the eyes of the practitioner are forced to adjust early on, and they experience their



fig. 4.7 View from Stupa Platform

Source: Author's own image

surroundings in a semi greyscale, as the eyes are unable to pick up the nuances of different colours in the absence of light. This phenomenon again reduces the temple to muted shades of grey and its most bare elements—forms and textures. Any embroidering of the structure is hidden, and the textbook-like walls of the temple become unreadable, forcing the practitioner to no longer rely on the carvings for guidance in how to experience the temple.

APPROACHING THE TEMPLE



fig. 4.8 Borobudur Temple from the Manohara

Source: Author's own image

It's early afternoon on the grounds of the temple, the sun is shining intensely on my skin. As we approached the temple, the mumbled background noise of tourists and guides soon becomes individual voices uttering the smooth words of the Bahasa language. Walking out of the Manohara Restaurant, we follow the path past the Borobudur sign which is placed almost like a label as the temple seen in the near distance. The sun hits my skin aggressively creating a state of discomfort, but I attempt to push past it. We keep walking. Grass and greenery now surround us as we make our way up the hill of Borobudur, though hiding any view of the temple. I feel as though I am in a jungle, travelling towards an unknown

destination.

I begin to explain the significance of this temple to my interested mother, but am abruptly interrupted by a young child repeating the word 'selfie' with the biggest smile on his face—you can sense his excitement over encountering a foreigner. Flattered, I smile and nod, and proceed to take a photo with the boy. He runs away yelling 'thank you' and I resume in conversation. Not three words in, and another interruption. This time, a group of seemingly older women, painted nails, gold jewellery, and extravagant hats. "Photo?" They ask with a grin, as they already arranged themselves around us. We nod, take the photo, and continue on. Before long, our short



fig. 4.9 Borobudur Temple from the base of the hill

Source: Author's own image

journey from the base of the hill to the temple became an extended photo session. Frustrated, I lower the brim of my hat and power through the crowds of domestic tourists taking photos of themselves on the hill.

During my previous visit the day before, we approached the temple from the front staircase, but this time, we climbed up the side of the hill. From grass to gravel, I part the low tree branch in front of me to reveal the mighty Borobudur. The immensity of this structure seemed over-powering the first time, but now, it feels as though I know it, and I am able to partake in its spirit. Surrounded by staring tourists, my reality of the temple feels very unique with a special pass attached around my

neck.

I centre myself before the temple, attempting to take in its entire presence, looking left and right from corner to corner, and staring at the path of stairs straight to the top. With an examining gaze, I see the undulating placement of Buddha statues in the galleries. The temple in full daylight becomes a little overwhelming. The stupas are hidden from view behind the galleries, and only the central stupa peeks through with its tip. As my eyes graze the temple's surface from left to right—I can feel the rough texture and the indents of the carvings on the palms of my hands as if I were touching them. The verticality of each stupa creates a beautiful rhythm as I sweep



fig. 4.10 Monk circumambulating the Borobudur Grounds

Source: Author's own image

horizontally—trepidations coming with each step in the facade. With so many repetitive details on its facade, the temple is a gestalt. It is a natural reminder to not focus too much on the little aspects of life, but to stay engaged in the bigger picture.

The closer I move towards the entrance of the first gate, the more the temple disappears behind itself, soon leaving me with just a view of what is directly in front of me.

I lift my knee above my waist and propel myself on the first step, and the next few until we reach the flat base level before the galleries. At this height, I look not too far down at all of the faces of the tourists gazing up towards the temple, and then I shift my gaze upwards—my

eyes sweep just above the treetops of the hill. Already, I feel further along on my journey into the temple. I take my time to absorb the entity I have now become a part of by merely stepping onto its ledge before I fully submerge myself into its being.

ANALYSIS

The journey towards the temple acts as a preparation for the experience within its structure. After entering the temple grounds, the route is through the Manohara building—a Japanese research centre transformed into a restaurant. The Manohara serves as the hub from which monks leave to their lodgings, tourists embark towards the temple, and all visitors sit collectively



fig. 4.11 Monks walking towards Borobudur

Source: Author's own image

to enjoy a meal with the temple in the background. From the Manohara, a glimpse of the temple is visible through the trees, teasing the visitor.

The journey towards the temple begins with a 10-minute walk on a path or the side of the hill, both lacking any visibility of the destination. The mind creates its projection of the final location and becomes enthralled in the event which imagined to take place. The anticipation of a spiritual experience is evident among the guests, and the excitement is visible. Being emerged in this atmosphere only serves to develop the imagination further. On the walk, practitioners can engage with each other and participate in the collective atmosphere.

The full height of the temple becomes visible

from the base of the hill. As practitioners approach the temple from there, the higher levels become less visible, and they concentrate on the platform directly in front of them. The strategic placement of the platforms is to focus the attention on the temporary location and not allow for the diversion of mind from the visual distraction of the other levels.

Similar to the arrival to the temple in darkness, the architecture commands attention and requires movement to see it in its entirety. By elongating the facade, the architect can mobilize the practitioner. The lack of information provided to the viewer by placing the ends of the temple just out of the cone of vision incites a desire to change positions to see the entire facade. The amount of missing visual material may



fig. 4.12 Northeast corner of the Borobudur Temple

Source: Author's own image

be slight, but the need to change positions stimulates curiosity, and a further interest to explore the temple. As indicated by Loewenstein, “when attention becomes focused on a gap in one’s knowledge...[it] produce[s] the feeling of deprivation labelled curiosity. The curious individual is motivated to obtain the missing information to reduce or eliminate the feeling of deprivation.”³

On the immense facade, the sun’s high angled rays accentuate the textures and details by creating deep shadows. These shadows separate the facade vertically as the face of the temple begins to step back, leaving the front portion closest to the viewer, and pulling each outer portion further and further back. This causes a telescoping effect, bringing focus to the centred stairs

and first gate of the temple.⁴ It is an effective method of drawing the attention towards a particular portion where the practitioner is expected to proceed.

As the practitioner walks towards the entrance of the temple, they encounter an open, elevated platform. This empty level serves as the introduction to what is to come. It provides an elevated view of the people surrounding the temple, and the landscape beyond—creating the ability to oversee the surrounding activity which engages a slight feeling of the God complex in the practitioner, increasing their confidence in the journey to come.⁵

WALKING THE GALLERIES



fig. 4.13 Monk circumambulating the second gallery of the Borobudur Temple

Source: Author's own image

Ascending the eastern staircase and leaving the base level behind, we pass through the first gate marked by the head of Kala, otherwise known as time. The stones of the gate pass above my head, as I focus on taking tall steps to match the height of the stairs. The first platform of the galleries lowers before me as I straighten up from the climb—large walls full of texture, weathered stones fitted together, and an infinite sky contrasting the sharp edges of the miniature stupas topping the galleries.

We proceed to the left. A long hall lays before me with carvings on either side, containing endless lessons. I look over my right shoulder to examine the two tiers of detailed narratives. Then I turn to my left and crouch

to the level of the carvings on the outside wall to be better able to see them.

As we walk through, Nurudin explains the stories of Buddha while passing the carvings—I am writing vigorously trying to capture each detail of Buddha's story. I find myself thinking about the monks who walk this space time and time again. They know and live the story of Buddha, they do not need an interpreter, or a guide, they glance at the carving and channel the sentiments—the state of mind they enter when they begin their meditation intensifying the experience and meaning of each teaching.

We continue on through the temple. High above each carving, Buddha statues sit poised and patiently watching over each person who



fig. 4.14 Borobudur Gallery

Source: Author's own image

walks before them. With 504 statues in this temple having a unique face and body—each figure contains its own personality, and it feels like I'm exchanging my presence with an actual Buddha.

I look to my left—the wall towards the outside stifles any views of nature beyond. I'm beginning to feel a little trapped within these tall walls with no apparent exit. I continue following the path of the galleries when I approach a sharp corner blocking my view and obliging me to turn. I make my way around it, then, yet another corner. I turn to find a long hall with more carvings and commanding walls on either side. This experience continues to repeat itself after each turn. Finally, I reach

the stairs and ascend to the next level where the same feeling surfaces as I proceed. I start to feel lost with no view towards the outside. Though I cannot see the nature beyond on the walls, they contain carvings of the mountains and trees of Indonesia. The stories create mental pictures of these beautiful landforms. I hear the birds chirping around me, and feel the sun on my skin. The complexities of nature are abundant, and I somehow feel more connected to this entity which I cannot see.

The labyrinthic path within the galleries has me losing my place. The walls seem to get taller with each level we ascend. Instead of feeling more trapped, I'm starting to feel more integrated into the temple, almost as if



fig. 4.15 Monk circumambulating among tourists at Borobudur Temple

Source: Author's own image

it's wrapping its arms around me.

Another level, another series of teachings on the wall, and another step up, closer to the scorching sun. With the last platform of galleries ahead of us, we seek refuge in any shadows that come before us.

I get a glimpse of the stupa platform from the stairs. Though I am tired, we have followed the story of the Buddha from the beginning, and it is culminating in this one last gallery platform. The excitement is building once again. My vision seems to sharpen as I see that we are on the final platform, and I regain awareness of my interest in the carvings and the intricacies of the path. We continue through the labyrinth of the temple once more, and finally, make

the last turn to see the staircase in the near distance.

ANALYSIS

The temple, as most affect-driven architectures, strives to set up a network of potential stimuli and leave it up to the practitioner to engage from there. The galleries are the most densely populated with this network, as this zone prepares and educates the practitioner for the experiences further into the ascent of the temple. The galleries are pedagogical in nature to teach about the life of Buddha and inform the actions in the circular stupa platforms.

In the gallery section, the staircase is the



fig. 4.16 Borobudur Gallery Carvings

Source: Author's own image

first element encountered. The tall stairs of the temple draw attention to themselves purely through their size—again bringing more awareness to the simple act of climbing and movement of the body. As the practitioner ascends the stairs to the next level, gates pass overhead. They delineate the entrance into a new platform through their towering presence, and overhead carvings—this induces the practitioner to change their position to look at the carvings, creating conscious movement. The change in posture of the practitioner is an unusual position and therefore causes the body to become more alert subconsciously. The carvings of the gate contain reminders of practice; the Buddha, the Darma, and the Sanga—enlightened beings, Buddhist teachings, Buddhist followers respectively.

Additionally, the gates allow the practitioner to orient themselves through the temple by the act of crossing a threshold into the next level. With a similar objective, the seated Buddha statues are carved with different hand positions depending on their orientation to the cardinal directions. For example, the east facing statues have the right-hand open, and facing down, called *Bhumisparsha*, or the Touching the Earth mudra. This hand position represents achieving enlightenment, and the passing of knowledge to the lay people through the touching of the earth. The east is the direction in which monks descend once they have completed their journey through the temple, bringing the knowledge they encountered down to the lay people. Through these subtle hints, a knowledgeable



fig. 4.17 Monk Circumambulating in the Galleries of Borobudur

Source: Author's own image

practitioner is able to identify their position relative to the temple and the cardinal directions, improving their sense of proprioception.

Though the temple assists in the identification of directionality in this case, in almost every other way, it attempts to seclude the user in the gallery platforms as to eliminate the sense of location in space. The galleries are labyrinthic. Constant corners block the view ahead and require the practitioner to turn through each portion of the gallery, making it hard to realize the location. The walls are tall in either direction—the outer walls are designed to reach above the vision of the practitioner to separate them from the nature laying beyond, meanwhile the interior wall is raised to a height where the next levels of the temple

are not visible to the practitioner. These walls create a sensation of being sunken into the temple itself, becoming one with the construction. Maintaining the vision to the current level is a method of architectural mimesis which attempts to keep the user present in the moment which they are experiencing, and not looking to the future or the past.

On the tall walls of the galleries exist several sets of carvings varying from level to level—they range from two panels on the right side and one on the left to one on either side. When circumambulating, the practitioner follows the carvings on the top right wall around the entire platform, then circulates that level again, following the carvings on the lower right wall, and one last time following the carvings on the left



fig. 4.18 Buddha statues in the gallery of the Borobudur Temple

Source: Author's own image

wall. The carvings on the outer wall are significantly lower and smaller than the inner wall. This either indicates the carvings were intended to be viewed during prostrations or to not be read in-depth, only serving as a reminder.

A process called intrapsychic memorialization takes place when a practitioner reads the carvings and practices a “refashioning of identity by means of identification with the other,”⁶ the other being the Buddha being presented by the architecture. While the practitioners know the story of the Buddha well before it is presented to them through the relief panels, they are no longer “passively hearing” it, but “actively supplying it and its meaning from memory,” incorporating them more profoundly in the

commemoration of Buddha.⁷

The carvings themselves take on several roles besides the purely narrative function. As many affect driven buildings use darkness to minimize the dominance of the visual sense, the Borobudur Temple is a purely an outdoor construction with no entirely enclosed areas to block out natural light. Thus, strategic moves have been made to emphasize other senses. The carvings, the statues, and their casings provide depth to the surface, creating shadows and introducing ambiguous distances and form qualities. This is due to the changing light, which continuously alters the aesthetics of the surface. The analysis of these elements are no longer purely visual but become haptic analysis, and even begin to engage haptic



fig. 4.19 Looking up into the gates of the Eastern Staircase

Source: Author's own image

memory. This process makes use of the synesthetic quality of the memory by recalling the sense of touch when visually stimulated by something which was experienced synesthetically.

There is a disconnect due to the absence of nature in the journey through the galleries. The lack of a visual sense intensifies the other senses. The sounds become more pronounced, the birds, the wind, the rustling of the leaves, the fresh smell of cut grass becomes more prominent, and the humidity hugs the body with each step. The nature beyond the walls of the temple may not have an evident optical role in the experience of walking the galleries, but the absence of the visual stimulation inundates the practitioner in all of its other aspects, creating a calming atmosphere.

This helps to build a peaceful disposition for the practitioner.

As they pass the gates, the glimpses of the levels below and levels above provide the practitioner with the motivation that the end goal is within reach. This also gives them the option to take the easy route to the top of the temple instead of circumambulating in the proper ritual. The resistance to this temptation is rewarding for the practitioner, as they earn the experience at the top of the temple.

THE REFLECTION PLATFORM



fig. 4.20 Reflection platform of the Borobudur Temple

Source: Author's own image

We approach the final gateway with enthusiasm as we have reached the gem of Borobudur. I turn the corner, and the multiplicity of stupas stand before me, with the crowning stupa towards the centre. I climb the stairs, pass the gate and emerge into an open field—mountains peaking over the ledges, fresh wind grazing across my heated skin, and my personal space which had been condensed from the immense walls of the galleries now opens up to a sense of release. I begin to reorient myself into space again as I no longer have the walls of the gallery to dictate my range of motion. With the absence of carvings and stories, nature reclaims its presence—it gives me a rush to be reacquainted with its elements

again. The wild wind feels refreshing.

I look around for a bit longer, then start towards the left as I have been trained to do in the galleries. This level is composed of a circular platform inscribed into the lower square platforms. The circular stupa platforms on my right and the jutting square walls of the galleries to my left creates momentary expansions. It quickly gathers itself into a narrow passage where the edge of the circle begins to approach the side of the walls. We arrive near a corner of the square. After a long journey from the base of the temple to this platform, we find a row of tourists propped against the wall in the shade and decide to join them. I turn my back to the outer wall in an



fig. 4.21 View from Reflection Platform

Source: Author's own image

empty spot, grip my hands on the rough stone, and lower myself into a seated position. With the entire population of stupas before me, I quickly realize that each contains a Buddha who is looking out at me. I think back to the galleries, and immediately feel the difference in the interactions. The tall, narrow walls of the galleries provided a sensation of privacy in which to observe the Buddha and feel his presence. Meanwhile, the stupas expose the sheer amount of statues, and they somehow merge into one entity looking right at me.

The relaxed atmosphere of this platform is contagious, but there is still another portion of the temple left to be explored. We pack up and proceed to follow the curve of the platform

towards the east stairs.

ANALYSIS

The practitioner meets a circular podium holding an amalgamation of stupas as they arrive at the reflection platform. Until this stage, the practitioner had been surrounded by the tall gallery walls, dictating their direction of travel, personal space, and outward views—almost a prescribed experience. The galleries serve as the conditioning mechanism of the temple to train people how they are supposed to act during the journey towards enlightenment. When the practitioner reaches the reflection platform, the dispositions that were created in the galleries assist in the navigation



fig. 4.22 Reflection Platform at Borobudur

Source: Author's own image

of the new terrain. The reflection platform is relatively more open than the previous levels, and there is no architectural indication of how one is to act in this location.

The practitioner's view is constricted to the galleries populated by carvings nature and the Buddha. The path is narrow, and the walls are tall. Stepping into the reflection platform releases any feeling of constriction that the galleries may have created, leaving the practitioner feeling liberated as their aura is given more space. The absence of the carvings becomes replaced by the natural world beyond the temple walls. The characteristics between the carvings and nature are distinct, yet conveying the same motifs of being one with humanity.

The practitioner's personal space is probed by the undulating spaces as they navigate through this platform. The inscribed circle causes users to travel in a non-linear manner and creates pockets of reflection spaces where the corners of the square distance themselves from the edge of the circular podium. These pockets allow space for repose outside of the path of travel around this platform and face the central stupa, as well as the 72 smaller stupas placed around it.

Inside of each latticed stupa sits a Buddha statue, composed and peacefully looking out into the valley. The sheer number of Buddhas in one location may be overwhelming, but they are one entity manifesting itself into several bodies. This reinforces



fig. 4.23 Reflection Platform at Borobudur

Source: Author's own image

the Buddhist belief that human consciousness rests separate to the material world, and the physical body is merely a container for it.

In the overall journey of the Buddhist temple of Borobudur, the reflection platform is the location where the goal is most clearly seen—the central stupa stands tall among the other stupas, and is placed above the user's line of sight to create a change in position and increase alertness. This rise and central position relative to the user's current position is to also establish the final stupa as a destination to be reached.



THE STUPA PLATFORM



fig. 4.24 Stupa Levels as seen from the Reflection Platform

Source: Author's own image

Arriving from the reflection platform, I take my first steps into the stupas. The giant forms are now to my sides, and I am walking into a forest of figures. The narrow openings in each of the bell-shaped structures draw me into peek at the Buddha inside. I shift curiously from one cutout to the next to try to piece together the snapshots into one cohesive image of the Buddha inside. As poised as the statues in the galleries, the Buddha sits with his legs crossed and hands in the Wheel of Dharma position.

Stepping back, I continue examining each stupa individually, walking clockwise around the space. To my left, the giant bell-shaped forms, and to my right, a low curved wall holding the stupas above. I glance into the next platform where kids and adults alike are interacting with the stupas. With the incentive

of the higher platforms, I keep walking and examining the stupas.

After a full circling of the bottom stupa level, we reach the second platform. A group of monks, accompanied by several lay people, make their way up the eastern staircase behind us, then around the central stupa, and down onto the west side of the second level of the stupa platforms. In their arms, they carry mats, offerings, and necessities for the prayer. Quickly and orderly, each monk lays out their mat and adjusts their shawl after setting up a small display of offerings on the next platform. The front of each mat follows the curve of the platform, orienting the monks towards the east and allowing each of them to face the offerings before them. Promptly, the head monk's voice silences the bustle of the temple. It carries a



fig. 4.25 Stupas of the Borobudur Temple at night

Source: Author's own image

distinct tone of knowledge and confidence as he leads the other monks in the chant. The collective voices seem to almost impart the open and mindful spirit to those who stand around to watch—it becomes a force. Over the next hour, the monks' movement emerges from their voices like a trance. With each change in intonation, their arms moved from forehead to the sky to upper chest, lower chest, then folding down to a kneeling position, touching the forehead to the mat, then quickly rising back into a standing position. The intense peacefulness also emanates from the stone, and their presence contained in the present.

Encased in the moment, I feel the ringing of their chants in my chest—my ribs vibrating with each syllable. I place my palm over my heart to better feel the ringing and attempt to

follow along with their song. "Om Mani Padme Hum Om Mani Padme Hum Om Mani Padme Hum" I repeat quietly as my voice blends with that of the monks. The vibrations begin to expand past my chest and into my stomach as the sounds of the chants are echoing off the walls of the temple and return back to me. I close my eyes. As I blindly chant along with the monks around me, my body is overtaken by the internal echoing from external sounds. Each breath synchronized with the syllables of the chant becomes a conscious act, taking the full capacity of my cognition and leaving an emptiness around it. In an almost trance-like state, my body feels paralyzed while every corner of my consciousness is liberated into the sea of sentience around me.

I open my eyes to the vivid colours of the



fig. 4.26 Monks engaging in rituals among Stupas

Source: Author's own image

monks' robes, feeling the resounding peace from their bodies and the stones around them. I shift my gaze over the valley beyond the temple. The stupas before me become almost like a landscape, their unique form blending into that of the trees in the distance—the little fog that is left dances between the forms, quietly concealing parts the distant lands. My body seems to no longer be defined within itself, but I can feel my consciousness expanding into the corners of the temple and the valley. Immediately in front of me, the second platform of stupas is outlined brightly by the sun's light, between them, glimpses of the stupas beyond. The rest of the temple, level by level, each more faded as it descends towards the landscape. Painted in the distance are the airy trees of the valley, subtle volcano mountains and the bright

sun overtaking the sky. I exhale and feel the expansive quality of what lies before me. One smooth sweep of the landscape causes me to evaluate my size and place in this environment. I am small among this greatness, the land, the temple, and the entity that exists.

As I turn back to the monks, I find myself desperate to silently connect with anyone else who may be similarly understanding the world.

I suddenly feel a nudge on my arm as a signal to continue on. I take a deep breath, turn around still enthralled in the experience and keep walking while trying my hardest to not lose the peace of the moment. Finally, we climb up to the last and final platform to complete our journey up the temple.



fig. 4.27 View into cutout from Stupa

Source: Author's own image

ANALYSIS

The arrival to the stupa platform indicates the practitioner's final step in their journey throughout the temple. By this point they will have learned the proper dispositions through experiencing the gallery platforms, understood the Buddha's teachings through experiencing the reflection platforms and with their arrival to the stupa platform, the time has come to apply and internalize their teachings.

The transition from the reflection platform to the stupas is a subtle one, as they are separated solely by a short stair, and left entirely open from one to the next. The visibility from the prior level is intentional to bring a sense of ease to reaching the central stupa—if

it can be seen, it can be achieved.

From the beginning of the journey in the galleries, the walls were high, and visibility was low, creating a feeling of containment which urges the practitioner to active their sense of proprioception. In contrast to the gallery platforms, the stupa levels lack any enclosing elements, disassociating the body from the temple. The sudden openness after the constraint of the galleries elevates the sensation and creates a feeling of being expansive beyond the self. This is due to the galleries becoming an extended skin as the practitioner walks the galleries. Once the gallery walls are gone, the practitioner loses the boundaries created by the walls and their personal bubble expands with no restrictions. Monks attest this feeling of expansiveness to that of



fig. 4.28 Monks chanting on Stupa Platform at Borobudur

Source: Author's own image

achieving a higher consciousness.

The bell-shaped forms which inhabit this platform stand tall guarding the Buddha statues on their interior. The open nature of the terrace and the dispersed stupas mimic the landscape of the forest in the distance. This creates a physical connection to the distant scenery, imposing the sense of touch on that of vision. This synesthesia either brings the landscape to the practitioner in the temple or expands the practitioner into the landscape beyond the temple—changing the way in which the practitioner relates to the world around them.

A Buddha statue can be seen in the stupa's many cutouts. A practitioner may not be able to visually see the Buddha statues encased in the stupas from a

few steps back, but they do retain a mental picture of the Buddha from the prior levels. A direct view of the statues is not necessary as the previous levels bombard the mind with many Buddha images. These remain in mind and are subconsciously projected onto the stupa. Through the transcendental phenomenological reduction, a practitioner can form an experience with the stupa as if it were visually apparent that it contains a statue of Buddha.

A slight difference can be seen in the levels of the stupas by taking a closer look at the cutouts within the middle portion. The bottom two levels of the stupas have diamond-shaped cutouts allowing the practitioner to witness the Buddha statues within, while the cutouts of the top level are square. The



fig. 4.29 Overlooking countryside

Source: Author's own image

diamond cutouts represent the lack of stability, while the square represents a stable, absolute form. This transition between forms informs the practitioner in which stage of meditation they are at that moment. The unstable diamond cutouts indicate that further meditation is needed.

The spaces between the stupas of the upper levels provide small room-like open enclosures within which the monks practice. The wall of the following platform is used to place offerings. As the monks follow through their rituals facing this wall, they collectively chant towards it creating a slight echoing of the voices. This echo adds depth and vibration to the chants, creating an atmosphere and intensifying the sentiment amongst anyone within hearing distance. This becomes a

vehicle for collective behaviour of a spiritual nature, whether it be through participating in the rituals, chants or just the meditations.

An anticipation builds as the practitioner journeys upward through the platforms. Arriving to the top, the landscape commands the full attention, leaving the temple almost invisible in its presence. The ability to overlook such vast lands fosters a sensation of awe, allowing the practitioner to evaluate their place in the universe creating a collective humbling. The journey through the temple, the height, the landscape all amalgamate into one experience. With the heart of Borobudur in the immediate vicinity and the pedagogical landscape in view, the top stupa level becomes the location of ultimate enlightenment.

DESCENDING THE TEMPLE



fig. 4.30 Monk descending Borobudur

Source: Author's own image

Several hours after we had entered the temple we finally reached the top, full of emotion and no less enthused than the beginning. We absorb as much as we can from the soulful energy around us, and begin to head back towards the Manohara. As we come down the east staircase, I must consciously step down as the stairs are lower than I am used to. Slowly the bell shaped stupas form together as I leave them behind, and I arrive at the top gate of the galleries. I turn around for a slight moment to relish in the moment once more before I leave the place which gave me perspective and the peace of emptiness.

I turn ahead and see a tunnel created by the gates of each gallery. Light peers

through the openings and onto the walls of each gate, and through the spaces the green from the landscape acts as a contrast against the strong stone. I begin to descend the stairs carefully, making sure to pause at each gallery to acknowledge it and quickly reminisce of the moments spent here. With each gate, a reminder of the Buddha comes from the three stupa shaped statues symbolizing "the Buddha," "the Dharma," and "the Sangha." We reach the final base platform and move to the side to rest here for a bit. I am overcome with an odd feeling of nostalgia, reviving experiences I had only hours ago. The low perspective of the valley with its diverse tree lines and the groomed grass stares back at me as if it is now



fig. 4.31 Monks leaving the Borobudur Temple

Source: Author's own image

used to me as a part of this temple. Nothing had change but me.

Several minutes later we pack up and continue down the stairs and onto the hill. I can feel the excitement of the people who have yet to partake in the journey of the temple. With a smiling nod, I pass them and refuse yet another photo. The expedition is complete.

ANALYSIS

The descent of the temple of Borobudur is a subtle segment of *deja vu*, as the elements of architecture which once had a distinct impact are momentarily relieved, sparking a revival of any mental or emotional accompanying effects. The descent brings perspective

to the experience by bringing the practitioners through the platforms where they inherited the knowledge of Buddha and began to internalize it for themselves. The directional nature of Borobudur focuses the attention of the practitioner in a tunnel-like manner. The gates team together to create walls from the view at the stupa platforms, and by descending, more becomes visible to the practitioner as the perspective changes. After descending the gallery levels of the temple, the visitor encounters the same open platform on which they began their journey—once again, overlooking the vast valley ahead and the fresh minds of the people about to embark on their journey through Borobudur.

WAISAK FESTIVAL



fig. 4.32 Mendut Temple

Source: Author's own image

The preparations for the Waisak Festival had begun several days before the day of celebration itself, at both the Borobudur Temple and the Mendut Temple. Earlier in the day we had explored the stage assembly at Borobudur, but now we had arrived at the Mendut Temple. The temple is surrounded by a gate, keeping people from getting in without paying. As soon as we arrived, the guards looked at me and said “Georgiana, welcome!” It felt a little surreal having such an intimate relationship with the temple. The head guard opens the gate, and begins to give us a short tour of the grounds. Meanwhile, a group of monks begin circumambulations around the Temple as a preparation of the following day.



fig. 4.33 Monks and lay people waiting for the Waisak festivities to begin

Source: Author's own image

The morning of the Waisak Festival had arrived. A bright, hot sun shone on us from above while we try to make our way to the Mendut Temple. The streets are closed early on in order to make way for the procession. We arrive to the Mendut Temple where many people are trying to get into the gates. We flash our passes, and bypass the crowd. We push through and arrive at a large tent beside the temple where the monks and lay people are sitting and conversing amongst themselves. I wander around to find a spot inside the tent and join in the ceremony. Each of the head monks from the different types of Buddhism take turns on the microphone leading the chant for the crowd before them. With thousands of people side by side, chanting, the intensity of emotion builds.



fig. 4.34 Monks circumambulating around the Mendut Temple

Source: Author's own image

After the chants in the tent, the monks begin to gather to the north of the temple to begin their procession, and I line up along their path to follow along. Each monk stands behind the next, holding their hands together at their chest. As they take their first steps forward, the voices emerge from the silence and envelop me in their deep tremor. The vibration immediately transports me into their meditation and I cannot think about anything. As the procession of monks pass me, several of them bow their heads in my direction to acknowledge me as a participant in this ritual. They circle the temple three times and begin to climb the stairs into the first level. The procession of monks curves around and up into the staircase. I feel the hand of the security guard on my shoulder. He pulls me out of the way of the monks and ahead of the other journalists and photographers. The sea of orange moves briskly past me and flows around the inner hall of the Mendut Temple in a similar fashion as on the ground. Once they complete the route within the temple three times, the front of the procession proceed into the Room of Offerings.



fig. 4.35 Monks chanting at the door of the Room of Offerings

Source: Author's own image

While making their way into the Room of Offering at the Mendut Festival, only a small amount of monks were able to be inside, with the rest of the monks lined up against the hall leading to the room. They chanted along with the song, and kept in their meditation. Between the two walls, journalists and photographers push the monks aside to reach the doorway so they could take photos. I stand at the back witnessing the commotion between the calm of the monks and the craze of the journalists. While I'm in my peace of being outside of the situation, the head of security grabs my hand and pulls me towards the crowd. He moves the photographers aside to make way for us to get through. Each person being pushed looks at me confused and filled with rage, meanwhile I look at the monks I am passing and mentally apologizing that I am somehow entering this sacred room while they are out in the hall. We approach the door and I am pulled inside and onto a ledge overlooking all of the chanting monks. I take a deep breath as I realize that I am alone in the room with the monks, and the rest of the lay people are stopped at the entrance.



fig. 4.36 Monks chanting in Mendut Temple Room of Offerings

Source: Author's own image

I try to be as silent, still and invisible as possible as to not disrupt the rituals taking place in the Room of Offerings. What a privilege to be inside this room right now, I keep thinking. The room is small, fitting only about 20 people in front of the three statues of the Buddha and the abundance of offerings placed before them. The ceiling is tall and a in the form of a stepped pyramid in order to reflect as much sound as possible. The monks stand shoulder to shoulder, hands in prayer and head forward. Their voices mend into one. A deep vibrato resonates against the walls and creates a slight echo following each syllable. I feel the vibration of their sounds within my ribcage as if my body was empty and the chants are inhabiting my internal space. With so much intensity surrounding me, I get lost in the trance of their voices and remain in a state of awe.



fig. 4.37 Monks posing in front of Mendut Temple

Source: Author's own image

As the last chant is sung in the Room of Offerings, the vibration is left in a continuous echo throughout the tall space. The monks turn around and begin to exit the room past me. I follow close behind when suddenly they stop and I am told to exit down the stairs. As I begin to descend, all of the monks turn towards me and shift over to the right side of the staircase as to create a clear pathway for me to reach the ground. I remember that Buddhist monks are not allowed to be touched by a female, or they must engage in a three week cleanse. I bow my head towards them in understanding and proceed down the stairs carefully. With each step and each face that I pass I try to image their sentiments of participating in such a powerful ritual. Once I reach the bottom, I turn to see each monk perfectly posed beside the next, with the beautiful Mendut Temple behind them, ready for the media shots.



fig. 4.38 Interviewing Monks

Source: Author's own image

The photo session finally comes to a close and the monks descended the stairs of the temple. I hurry towards a group of smiling monks and bow my head and say hello. To my surprise, one of them speaks English and asks me how I am enjoying the Waisak rituals. Overjoyed, I respond and proceed to ask him several questions in regards to his choice of attending the Festival and his appreciation of the Borobudur Temple. I am informed of the importance of this temple and festival to the Buddhists around Asia, and that his group of four men are the only people from Thailand that were able to afford the trip to attend the festival. He expresses his gratitude for his fellow monks from around the world and tells me that his personal mission is to show others the beauty of Buddhism, that through this practice the people of the world can become united and live in peace. While we discuss, journalists snap photos and other tourists listen intently.



fig. 4.39 Posing with Monks post interview

Source: Author's own image

As our conversation comes to an end. I bring my hands together at my chest and bow my head to say thank you. The monk mirrors my actions, smiles and tells me to place my hands in front of me. He reaches into his small bag and pulls out two woven bracelets. He holds them between his hands and begins to chant along with the three monks behind him. He opens his eyes and tells me that these are blessed bracelets and he is offering them from his soul. Explaining that I must not reach, but gratefully receive, he drops the bracelets into my hands and bows his head. He does the same for my mother beside me. We take several photos with the monks, and they say goodbye as the next ritual is about to begin.



fig. 4.40 Monks circumambulating while photographers take photos

Source: Author's own image

During the visit to the Mendut temple before the festival of Waisak, it was calm and peaceful. Upon our return, the grounds were filled with domestic tourists, large groups, and some foreign tourists, alongside the practicing monks and the schools of Buddhism. I began to notice the difference between the experiences of the practitioners and the tourists—taking selfies, then immediately moving on to the next picturesque portion. To them, this is just another temple in a country full of temples. As the processions of the Waisak festival take place, photographers and journalists disregard the sacred space of the practicing monks, and barge through to take photos. This divide was present both at the Mendut and Borobudur Temples. The resiliency of the monks is evident as they remain in their mental space, seemingly undisturbed by the external distractions.



fig. 4.41 Monks lined up to begin the procession towards Borobudur

Source: Author's own image

After an intense morning of rituals, the signal is given to proceed to the street. The monks are escorted first, followed by the thousands of people. Each monk lines up behind the next, in front of their personal helper holding a decorative umbrella to shade them from the sun. The monks are grouped together according to the country from which they originate. I look around and find the monks which I had previously conversed with, and stand beside them. As the 3km walk towards Borobudur begins, I walk with the procession and attempt to blend in while wearing similar colours and emitting a peaceful disposition. During this long walk, I come to realize the collective strength created from the simple act of participating in this ritual together. Their dedication to the practice of Buddhism becomes contagious and pushes me to confidently follow alongside them.



fig. 4.42 Indonesian people watching the Waisak Parade

Source: Author's own image

As the Waisak Festival passed through the villages in procession towards Borobudur, the Indonesian people watch in excitement. They feel no relation to the culture and religion of Buddhism, yet can appreciate the procession that makes its way through their towns. They stand together behind their phones, smiling when the monks and celebratory floats come by, and some people even join in the march. Seeing the faces of so many Muslim people participating in this procession reminds me of the experience at the top of the Borobudur Temple. All around us, nothing but smiling faces, cameras, and the rough stone of Borobudur. The calm of the temple breathes Buddhism, and with each platform being ascended, reaching closer and closer to the gem of the Borobudur Temple. As we climb to the platform of the stupas, the ringing of the voices from the call to prayer of the Masjid can be heard from the neighbouring villages. Sometimes the melodic voice of a man, other times of a young but trained child. The mixture of the Buddhist atmosphere with active Muslim faith creates a field of belief all around us. Even if you have no association with either religion, the field is so powerful that you begin to empathetically participate.



fig. 4.43 Monks launching lanterns for the Waisak Festival

Source: Author's own image

As the procession reaches the Borobudur Temple, the monks proceed to repeat the same rituals from the Mendut Temple—circumambulating at the base of the temple, then through each of the levels, chanting along the way. They reach the stupa levels to find offerings covering the bases and continue the rituals. After the completion of the rituals at Borobudur, the monks retreat to their rooms to eat and rest for several hours. In the night, the crowds return. The field which we had visited a few days before was now gated off and surrounded by thousands of people. We pushed through to reach the front of the gates, showed our passes and were let into the open field. To the right, a long stage on which the monks were lined up, and to the left, deflated lanterns spaced out ready for the people to come. I walk along the stage and spot the same friendly face which I had encountered at Mendut sitting in lotus on the stage. He moves towards the edge of the stage to say hello again and tell me to stay close so that I able to have the best experience of the first lantern launch by the monks. I smile and nod. Several moments later, the gates are opened, people begin to flood in and take their spots. Once everyone is settled, four monks launch the first lantern.



fig. 4.44 People launching lanterns for the Waisak Festival

Source: Author's own image

After the initial launch, I take my spot with my mother at one of the lanterns close by the stage. With two friendly strangers, we each hold a corner of the lantern and write our wish onto the surface. As the lantern stretches out to its full height, I bend down to light the base and we wait for the hot air to fill the inside. The field comes to life as areas of white light begin to fill the spaces around me. The lantern in front of me starts to billow and slowly lift, we let it rise a little and grab the lower brim to prepare for its launch. As we wait for the moment of release, I see several flickering lights taking flight in the distance, and feel my lantern pulling upwards, and in one swift moment, we all let go and release our wishes into the sky. I am overcome by emotion as a part of me floats into the dark abyss, lighting its path along with the hopes and desires of the many souls around me. I hug my mother and we gaze at the collective lanterns floating higher into the sky.



fig. 4.45 Lanterns floating in front of Borobudur from the Waisak Festival

Source: Author's own image

As one set of lanterns dims into the sky, the first group of people are escorted off the field, and the next group is let in. After witnessing a few of the launches alongside the monks, we say our goodbyes. The friendly monk extends his hands again as an indication for me to do the same. He reaches into his satchel and pulls out a necklace from which a little Buddha hangs. He closes his eyes and begins to chant. As he drops the necklace into my hands, he shares his best wishes for my spiritual journey and says farewell. Full of joy and positive energy, my mother and I make our way off the lantern field. I turned back after we push through the crowds of the Waisak Festival to see the lanterns light the sky above the glowing stupa of Borobudur. They seem to be emerging from the temple itself.



CONCLUSION



A GESTALT

Exploring consciousness is journey that is difficult to communicate. It may not always involve the built world, but almost always relies on space. This space may reside within an architectural creation, within a clearing in a forest, or it may even be bound to the edges of yoga mat. Architects often attempt to replicate caves, mountains and other natural elements and create built representations of these primordial features. Regardless of its nature, spatial reinforcement is an invaluable support in the process.

There are obvious limitations as to what architecture has the capability of doing, as even the most beautifully designed space is not guaranteed to affect. Places of worship are commonly perceived to hold the capability to affect their users spiritually. The effect these places have on a practitioner is due to the complex interaction between attitude and intention that the users approach the architecture with, in addition to the architectonic qualities. The result is not immediate as immersive spiritual experiences intricate and require a development of faith, aspiration and mindfulness.

As the religious population of the world is decreasing, places of worship are also decreasing in use. The investigation at the Borobudur Temple is an exercise in reclaiming the power and value for this branch of affective architecture as sacred spaces have always been a laboratory for the spiritual experience.

Borobudur subconsciously facilitates curiosity and a desire to explore through the suppression of particular information. The use of compression and expansion in architectural space creates sentiments of release, meanwhile strategically placing features to manipulate the positioning of the body and create

an increased bodily awareness. Textured and smooth materials are utilized to activate personal synesthesia and establish a fundamental connection with space. Diversity in the engagement of senses provides a holistic understanding of the inhabited place and a more substantial bank of stimulus connections from which one can recall memories and sentiments. Manipulating the sense of sight, using darkness and shadow to expose light, either subtly or strikingly creates an atmosphere. Architectural mimesis generates a clarity for what the building is trying to convey and provides a behavioural example in some instances—the repetition of elements can develop dispositions to condition the body to experience the built form a certain way. These building and affective strategies can be applied to everything and serve as a new way of understanding the world.

Julio Bermudez suggests people must alter their perception of architecture to include classical philosophies, as well as alternative viewpoints and theology. These perspectives speak to how spirituality and embodiment are an “indivisible whole”.¹ He indicates that architecture must be “designed with the experience of the visitor/user in mind,” and should focus not around the “visual, but in kinesthetics, touch, hearing, and even smelling.” In reference to the Brutalist style, Bermudez suggests that buildings are not “representing some spiritual ‘other’” but are becoming the “locus of profound phenomenologies” themselves by creating an “invisible’ existential atmosphere.”²

If Bermudez is correct in suggesting that a building itself becomes the sole object of interest instead of a divine entity, then do the spaces of

Brutalism obligate their occupants to reach to higher consciousnesses as a response to the stark, raw nature of their architecture? The absence of architectural stimuli possibly becomes the stimulus itself, as people are left to search within themselves.

Alternatively, do sacred spaces contain a latent sentience, composed of the remnant spiritual atmosphere of past practitioners—making any changes in consciousness a direct result of the previous activity?

A memory of an ethereal atmosphere fills a space, as the intent of the architect and the pre-existing beliefs brought in by the visitor also exists in parallel. The amalgamation of these elements, in addition to the “architectural quality, user/visitor’s idiosyncrasy, and culture” all dictate the unique experience a person will have in that particular space.³ With so many distinct circumstances surrounding the architectural and spiritual experience, it is impossible to design for one person or one outcome in particular. It is essential to take an example from the Temple of Borobudur which displays a network of potential stimulants, where a different experience emerges for each of its visitors based on which stimulants are received. The spiritual experience can happen anywhere, but it is a tremendous undertaking to attempt to concertize it through an architectural form.

A question has emerged from the investigation of the physical space of consciousness which persisted throughout this thesis—how much of a spiritual experience is, in fact, a result of the spatial context? Though the direct correlation may not be evident, there is a complex network of innumerable unconscious factors. As a true gestalt, a heightening

of awareness is only truly possible when everything comes together, a body, an intention, physical space, and the infinite space of the consciousness.

NOTES

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CONCLUSION

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APPENDIX

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APPENDIX A
Bodily Perception

BRAIN & BODY

PHYSICAL

BODY

- Musculoskeletal System
- Skin
- Cardiovascular System
- Respiratory System
- Nervous System
- Endocrine System
- Exocrine System
- Urinary System
- Reproductive System
- Digestive System

NERVOUS SYSTEM

- Central Nervous System
 - Brain
 - Spinal Cord
- Peripheral Nervous System
 - Sensory Division
 - Motor Division

NEURONS & GLIAL CELLS

- Sensory Neurons
 - Transmit impulses from sensory receptors towards CNS (Unipolar)
- Motor Neurons
 - Impulse moves from the CNS to the rest of the body (Multi-polar)
- Interneurons
 - Impulse moves between sensory and motor neurons (Multi-polar)
- Glial Cells
 - Scaffold for neurons, provide support, nutrition, insulation, help with signal transmission in the nervous system

ENDOCRINE SYSTEM

- Pineal Gland
- Pituitary Gland
- Thyroid Gland
- Thymus
- Adrenal Gland
- Pancreas
- Ovaries/Testis

EXOCRINE SYSTEM

- Sweat: secretes sweat from skin
- Salivary: fluid secretion into the mouth cavity
- Mammary: milk-producing gland of women
- Prostate: the semen-producing gland of men
- Gastric: acids in stomach to help digestion
- Bile: producing glands of the liver
- Ceruminous: a special kind of sweat gland
- Lacrimal: secretes tears
- Sebaceous: oily substance to lubricate skin and hair
- Mucous: secretes to lubricate and protect

MIND

PROCESS

SYNAPSES

- Chemical Synapses
 - Slower
 - More precise/direct
 - Neurotransmitters
 - Serotonin
 - Mainly inhibitor, Role in regulating mood, appetite, circadian rhythm and sleep
 - Dopamine
 - Influences emotion and attention
 - Norepinephrine
 - Triggers your fight or flight response, increases heart
- Converts signals from electrical to chemical to electrical
- Electrical Synapses
 - Immediate trigger
 - Stays in electrical form

COGNITION

- Act of Knowing
- Perception
 - Body
 - Environment
 - Time
- Sensory Perception
 - Sight
 - Touch
 - Smell
 - Sound
 - Taste

LIMBIC SYSTEM

- Limbic cortex
 - Mood
- Hippocampus
 - Memory
- Amygdala
 - Emotions
- Limbic output

EMOTION & EMOTIVE RESPONSE

Table 2.1 Projected breakdown of a single human's existence
Source: Author generated content

CONSCIOUSNESS

STATE

AUTONOMY

- *Self-regulating neo-cortical regions*

SELF-AWARENESS

- *Stimulation of the medial prefrontal cortex*

UNDERSTANDINGS OF CONSCIOUSNESS

BUDDHISM

Impermanence:

- *Nothing, whether it's physical or mental, is permanent, for things to be unchanging, they must have an unchanging cause behind them, and no cause is ever constant. Everything is ever-changing.*

Suffering:

- *This is the association we have to the material world, where we base our existence on the impermanent material world.*

Non-Self:

- *We associate ourselves to 5 forms of existence which are not ourselves: physical forms (rupa), feelings or sensations (vedana), perception (sanna), mental formations (sankhara), and consciousness (vinnana)*

G. WILLIAM FARTHING

"Consciousness is the state or quality of awareness, or, of being aware of an external object or something within oneself. It has been defined as: sentience, awareness, subjectivity, the ability to experience or to feel, wakefulness, having a sense of selfhood, and the executive control system of the mind."

ANTONIO DAMASIO

"A conscious mind is a mind with a self in it. A self introduces a subjective perspective in the mind. We are only fully conscious when self comes to mind."

MICHIO KAKU

"The set of feedback loops necessary to create a model of ourselves in space and time."

UNCONSCIOUS

STATE

SUBCONSCIOUS

STATE

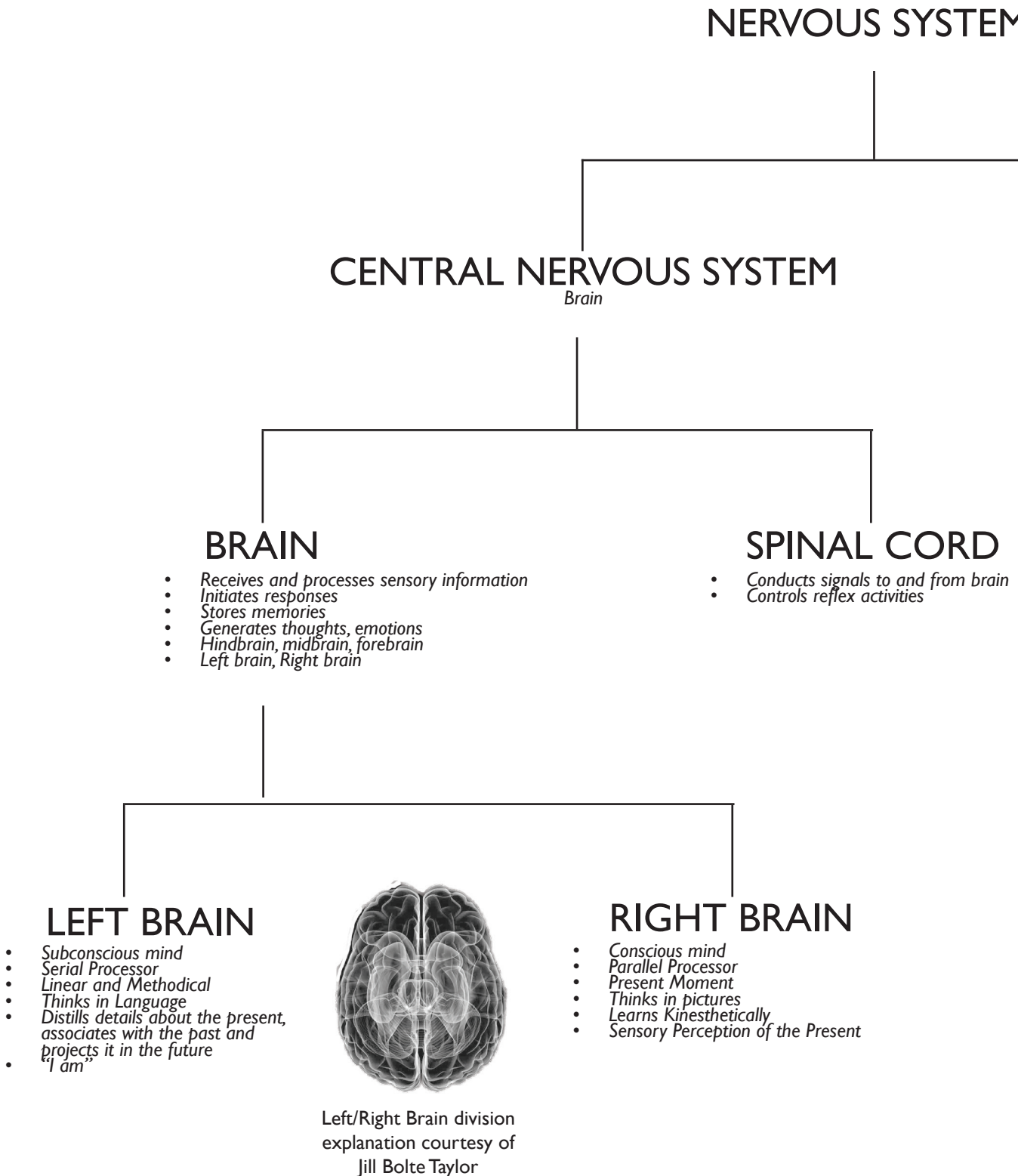


fig. 5.1 Nervous System Breakdown
Source: Author generated content

PERIPHERAL NERVOUS SYSTEM

Nerves

SENSORY DIVISION

- Picks up sensory stimuli

MOTOR DIVISION

- Sends directions from your brain to muscles and glands

SOMATIC

- Voluntary nervous system
- Bones and skeleton

AUTOMATIC

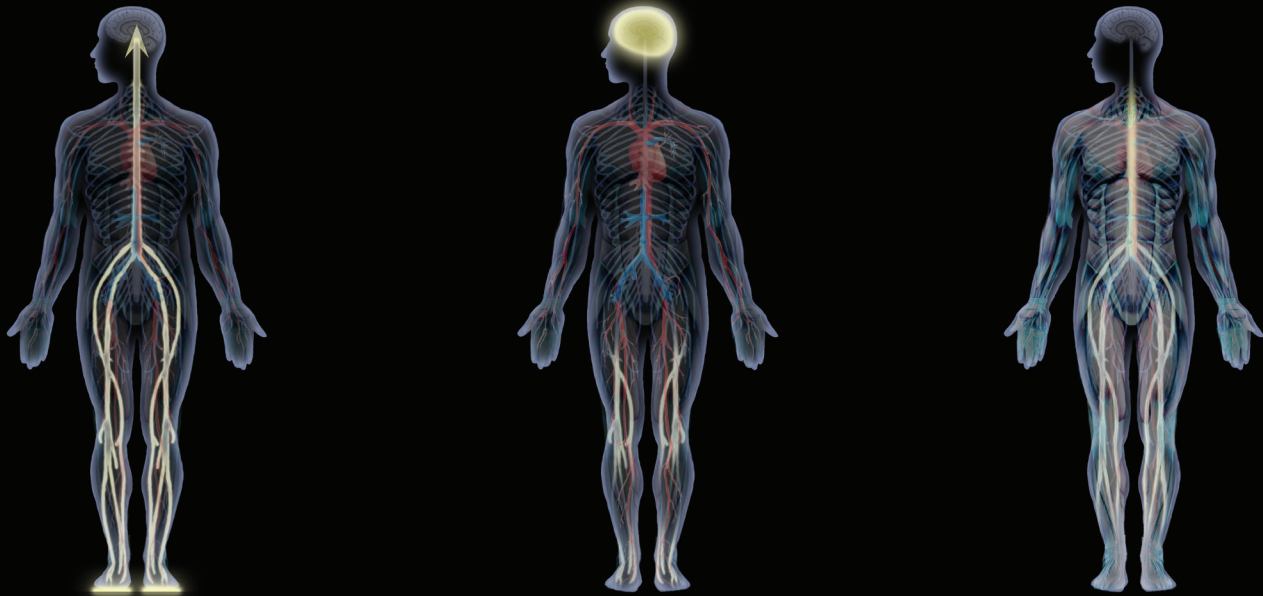
- Involuntary
- Keeps heart beating, lungs breathing, stomach churning

SYMPATHETIC DIV

- Mobilizes body into action
- "Fight or Flight"

PARASYMPATHETIC DIV

- Calms and rationalizes
- "Rest or digest"

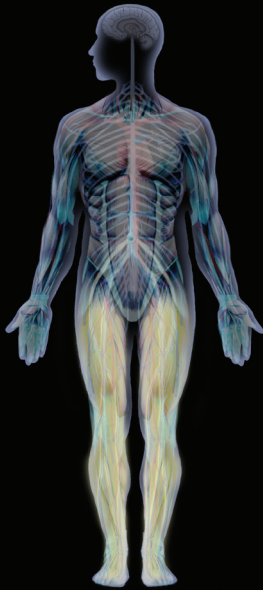


Sensory nerves pick up signals from contact. In this case, contact made at the feet with the floor, and at the knees. The sensory nerves deliver the message to the Central Nervous System.

The Central Nervous System receives the signal and processes it through the brain, while the Peripheral Nervous system also receives the signal through the sensory division.

In the Peripheral Nervous System, the interneurons send signals between the sensory division and the motor division, while the signal from the Central Nervous System is transmitted to the muscles by the motor neurons.

*fig. 5.2 Process of Sensation
Source: Author generated content*



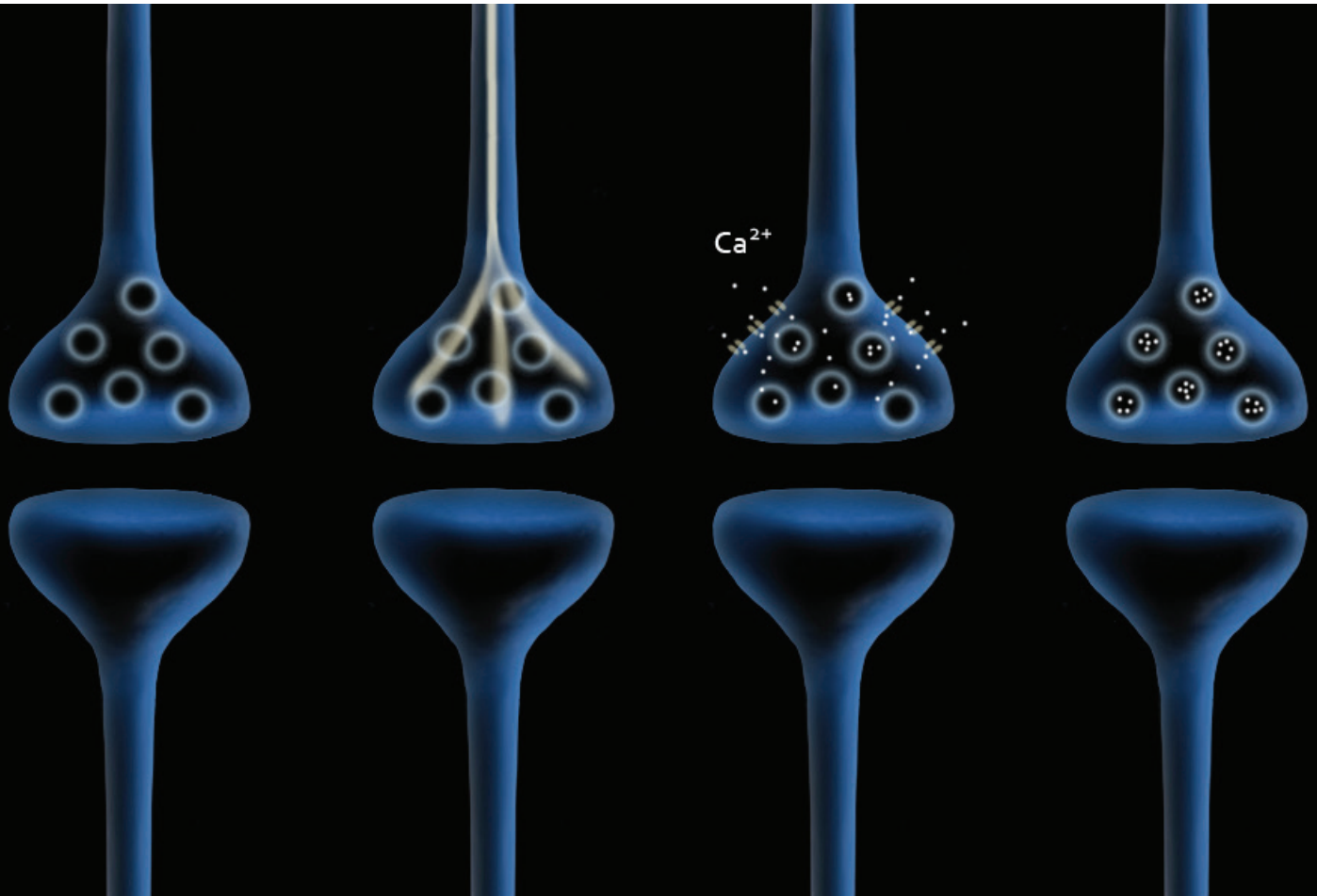
The muscles receive the signal (motor division), from here the signals get shot back and forth between the interneurons.



The signals between the interneurons activate the Somatic Division which put bones and the muscles from the Motor Division into motion.



Once muscles and bones are put into motion, sensory neurons are stimulated again, and sent to the Central Nervous System. This loop continues.



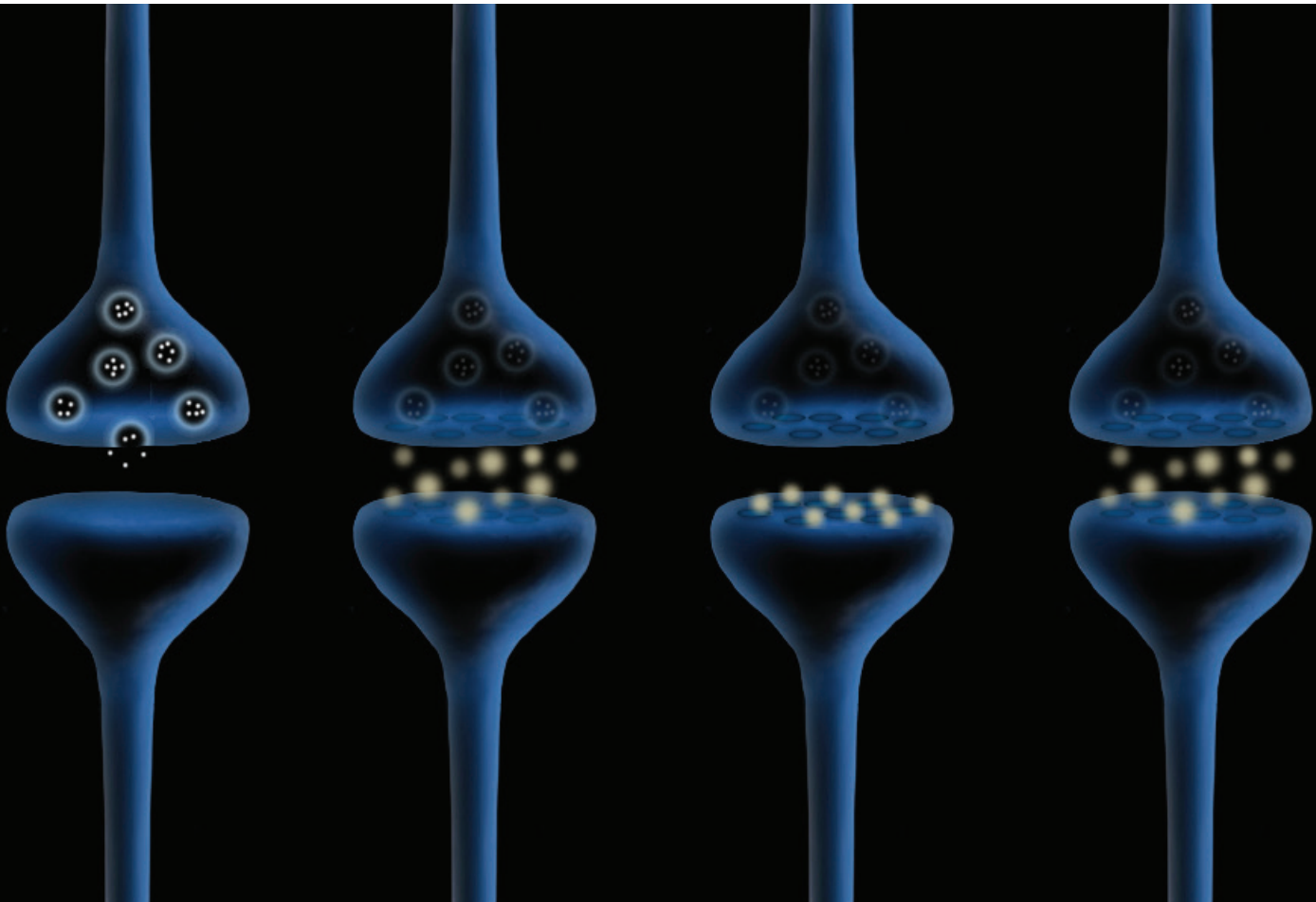
Neuron is at rest. Top neuron is the presynaptic neuron and the bottom is the postsynaptic neuron.

Action potential runs down neuron axon activating potassium and sodium channels in a wave.

Action potential activates the voltage-gated calcium channels. This opens the gates and releases calcium into the cytoplasm.

Positively charged calcium ions fuse into the synaptic vesicles.

*fig. 5.3 Synaptic Process
Source: Author generated content*



Calcium ions cause the synaptic vesicles to fuse with the cell membrane and purge the chemical messengers.

Chemicals act like neurotransmitters and travel across the synaptic cleft, binding to receptor sites on the post synaptic neuron.

Signal needs to be converted from chemical to electrical then back into chemical in order to be received and become action potential again. Depending on which neurotransmitters bond to which receptors, the neuron either gets excited or inhibited.

Neurotransmitters stay bonded to their receptors for only a few milliseconds. They then get released back and some get absorbed by the sending neuron, others are dissolved.

*Excited (Depolarizes neuron making it more positive inside and raising action potential)
 Inhibited (Hyper-polarizes neuron making it more negative and furthering it from the threshold needed for action potential)*



fig. 5.4 Matthieu Ricard being monitored by an EEG

Source: Davidson, Richard. Long-term meditators self-induce high-amplitude gamma synchrony during mental practice. PNAS. November 16, 2004.

SCIENTIFIC OUTLOOK ON MEDITATION

In 2004, neurologist Richard Davidson conducted a study alongside monk and geneticist, Matthieu Ricard, concerning neuroplasticity. Neuroplasticity is the ability of the brain to evaluate which neural connections are most commonly used, strengthen them, and then eliminating the less used circuits—it is the ability to evaluate and change its structure based on use. Exterior stimulation and physical experiences cause changes in neuroplasticity—the outside world can alter the structure of the brain. What this study is investigating, is the possibility of the brain to change through internal, mental stimulation.

For centuries there has been a dispute between practitioners of meditation and scientists regarding the origin of the mind. Neurology attests the mind's capabilities to the brain's make up, claiming that the mind is “just a manifestation of the brain,” while practitioners argue it goes far beyond that.

This study, which revolves around the mental results of effective meditative practice, engaged eight long-term practitioners, and ten novice volunteers to provide a range of comparative possibilities to the experiment. The monks had anywhere from 10,000 to 50,000 hours of meditative experience, whereas the novices began with no experience and were placed in meditative training a week before the study. Using an electroencephalogram (EEG) and magnetic resonance imaging (MRI), the subjects were tested before meditation to establish a baseline.

The objective of the meditation was to focus on the concept of compassion; both the monks and novices took part in a series of meditations.

Through the meditation, the long-term practitioners developed an extraordinary spike in gamma wave production, a high-frequency wave responsible for the unity of conscious sentience.

Increased gamma waves in the brain result in becoming more consciously perceptive and aware. The circuit responsible for action at the sight of suffering also experienced an increase in intensity, resulting in, as Dr. Davidson describes, “a readiness to act, to help.” Additional findings related to the right and left prefrontal cortex activity; the left side is responsible for positive emotions, while the right side produces negative emotions. During meditation, the left side of the prefrontal cortex presented much higher intensity in use, leaving the right side at a shallow level.

Through the results gathered as a part of this study, Richard Davidson and Matthieu Ricard were able to prove the brain's ability to change its structure internally through conscious and deliberate thought, opposed to external influence and stimulation.¹



*fig. 5.5 Matthieu Ricard with MRI machine
Source: Davidson, Richard. Long-term meditators self-induce high-amplitude gamma synchrony during mental practice. PNAS. November 16, 2004.*

APPENDIX B
Spatial Analysis

SACRED BUDDHIST ARCHITECTURES

Buddhist architecture consists of four typologies which are viharas, stupas, chaityas and pagodas. They are built to accommodate and act as an interactive background for Buddhist rituals. As sacred structures, they also guide the practices.



fig. 5.6 Vihara

Image Source: Elbisreverri. "Brahma Vihara Arama." Flickr, 18 July 2004, www.flickr.com/photos/elbisreverri/55522889/in/album-1009920/.



fig. 5.7 Stupa

Image Source: San, Anita. "The Sanchi Stupas." Digital image. Anita's Wanderings. 2015. Accessed December 13, 2016.

VIHARAS

Viharas are Buddhist monasteries, a space for residing, work, and meditation. Traditionally, viharas are found underground, carved from rock, and lined in small cells used for overnight occupancy.

They have been adapted for more modern building methods, but are now referred to as monasteries and resemble pagodas. Viharas typically have a common area in the centre surrounded by cells with an inset wall containing a shrine for Buddha.

STUPAS

Stupas are the original type of Buddhist architecture. Gautama Shakyamuni, the original Buddha, was cremated after his death, and the ashes placed in a mound at a crossroads for the pilgrims to have access to him, as a shrine. Soon after, the ashes were distributed between eight different mounds, which became stupas—shrines containing the relics of Buddha. Typical stupas are solid on the interior, as they are a built mound, combining bricks laid in earth making up the core of the stupa. There is a gate enclosing the stupa and a mast emerging from the top of the stupa acting as the cosmic axis. Stupas come in a variety of sizes and can serve as a standalone building or a focus of practice in another type of Buddhist architecture.



fig. 5.8 Chaitya Hall

Image Source: "Chaitya." Digital image. Wondermondo. Accessed December 13, 2016. <http://www.stepbystep.com/difference-between-vihara-and-chaitya-105029/>.

CHAITYAS

Chaityas are used as shrines or prayer halls, usually with a stupa at the end of the corridor. They are underground structures, carved out from rock, also known as cave temples. Characteristically, they are rectangular halls which have round roofs, with walls lined in pillars. The pillars have three portions to them, similar to Roman columns; the bottom part called the 'prop' is usually buried into the floor, the middle portion is called the 'shaft,' and the top portion is called the 'capital' and usually contains carved animal figures.

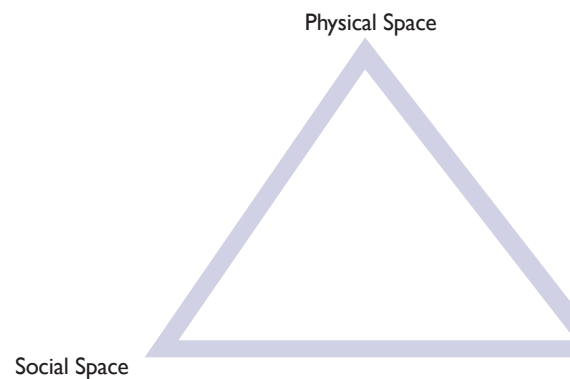
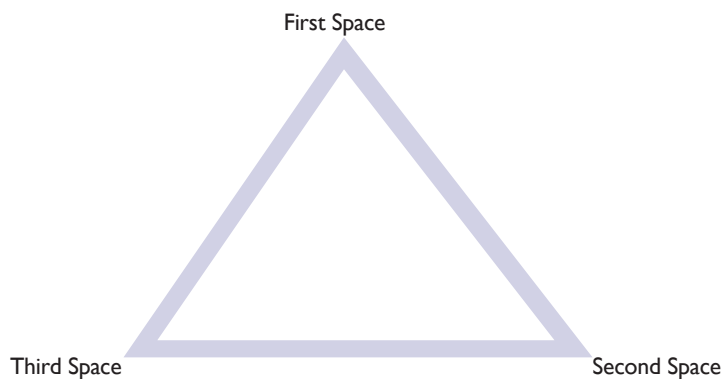


fig. 5.9 Pagoda

Image Source: "One Pillar Pagoda, Hanoi." Digital image. Vietnam Travel. Accessed December 13, 2016. <http://vietnam4u.co.il/this-is-vietnam-15-days-727.html>.

PAGODAS

Pagodas are used as temples or places of dwelling. Though they come in many different sizes, pagodas are traditionally a vertical structure, with an odd number of levels. Architecturally, they change depending on the region; some can be inhabited, acting like a gazebo while others are entirely exterior. Most Pagodas decorations are artistic elements opposed to religious icons.



	First Space	Second Space	Third Space	Fourth Space	Physical Space
ANDREW HEROD					X
ANTHONY GIDDENS					X
DAVID HARVEY					X
DOREEN MASSEY					X
EDWARD SOJA	Physical Space	Mental space/ Conceived space	Social space/ Lived space		X
GEORG SIMMEL					X
GEORGES BATAILLE					X
HENRI LEFEBVRE	Physical Space/ Perceived Space	Mental space/ Conceived space	Social space/ Lived space		X
JACQUES LACAN	The Real	The Symbolic	The Imaginary		X
MANUEL CASTELLS				Socially excluded from global society	X
MARTINA LÖW					X
MARX					X
MICHEL FOUCAULT					X
NIGEL THRIFT	Physical Space/ Empirical space	Mental space/ Unblocking space	Image space	Place space/ Nature vs. Nurture	X
PIERRE BOURDIEU	Field	Doxa	Habitus		X
ROBERT W. PREUCCEL/LYNN MESKELL					X
ROLAND BARTHES					X

Table 2.2 *Categories of Space defined by selected spatial theorists (page 12)*
 Source: Author generated content

APPENDIX C
Experiences



fig. 5.10 Indonesian Homestay

Source: Author's own image

LIFE IN INDONESIA

40 long hours of travel from Canada to Indonesia, we finally arrive at the airport in Yogyakarta to a smiling man holding a sign with our names. We pack into the car and embark towards Borobudur. I gaze out the window as we speed past the city with its elegant banks and malls, and the bustle of the large buildings quickly transforms into the calm of rice fields. An hour and a half later, we approach a site encompassed by forest, and the driver mentions the temple is hidden behind these trees. I immediately feel my heart start to race and my excitement skyrockets—but it's not yet time to explore. We drive along a little further and make our way into a side street and begin winding through dirt roads. At a large carved stone, we turn right. The car pulls into a bright and joyful, orange concrete house, and another smiling man greets us. His relaxed demeanour almost demands us to slow down and enjoy the moment. He introduces himself as our host, Nurudin, and helps us inside, showing us to our room in his house. Behind large wooden doors, a polished and put together interior, and a line up of diplomas on the wall. For the next nine days, we became a part of Nurudin's family, playing with his young son, eating meals together



fig. 5.11 Indonesian Homestay

Source: Author's own image

and having in-depth discussions on the porch under the moonlight. Though it wasn't until we cleared the dinner table one night, that we were able to peek into their lives.

I enter the kitchen to stack the dirty dishes. The warm wood floors suddenly turn to cold concrete, the painted walls become stark concrete enclosures, and the polished atmosphere turns to a rugged feeling. My heart aches as I realize they had prepared their home to offer the best of everything they have to their guests, while they live in a completely different world within the same house. I turn my head as I hear Nurudin's son giggling, to see the family and several neighbours sitting on the concrete ledges joking around. The change in scenery from one half of their home to the other didn't seem to phase them but only reinforce their warm spirits.

As I continued to travel to meet many more families, it only became more evident that this humble and welcoming spirit lived inside each person of Indonesia.

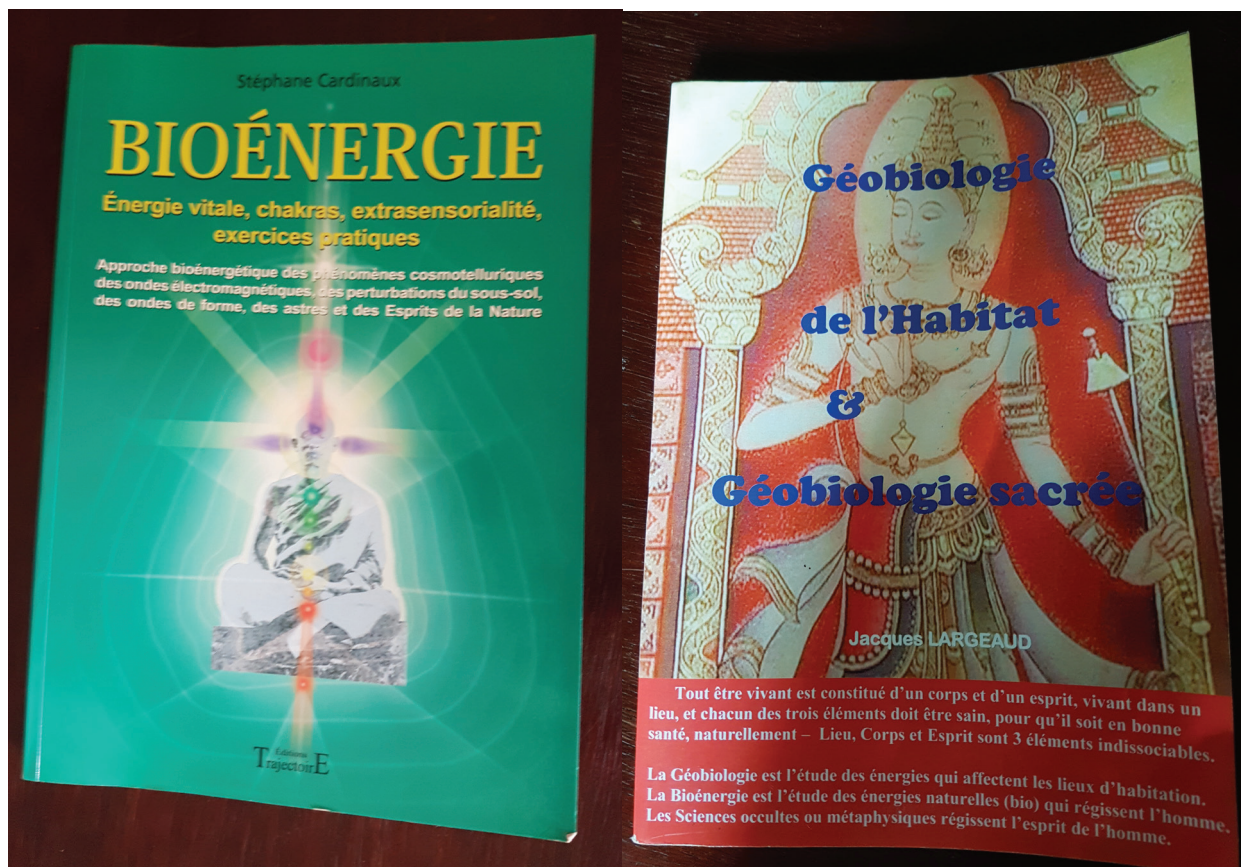


fig. 5.12 Michel Tabourel's recommended books

Source: Author's own image

MICHEL TABOUREL

Every morning, I would grab my notebook, my coffee and head out to the porch. This morning, as I walk towards the door, I see an old man sitting on Nurudin's front porch in my spot. He greets me, informs me that he had unexpectedly stayed the night with his family, and asks how I am enjoying the Borobudur region. I introduce myself and explain to him that my purpose for my visit is academic and in fact revolves around the Borobudur Temple. Pleasantly surprised, he introduces himself as Michel Tabourel, a meta-physicist from France who had moved to Indonesia with a deep love for Borobudur. I sit down next to Michel as he begins to tell me the story of his career, from working with archaeologists in Asia to meeting his wife while on research. Our conversation eventually arrives at the topic of energy and consciousness. Michel seemed to become more comfortable with me as we both spoke openly about our experiences of the two subjects, and after an hour of conversation invites my mother and me to his home to share his research. Fast forward a few days, we arrived at a small gated neighbourhood in Yogyakarta. Michel greets us at his front gate and brings us in. I sit down at the dining table and immediately notice the wonderful energy of the

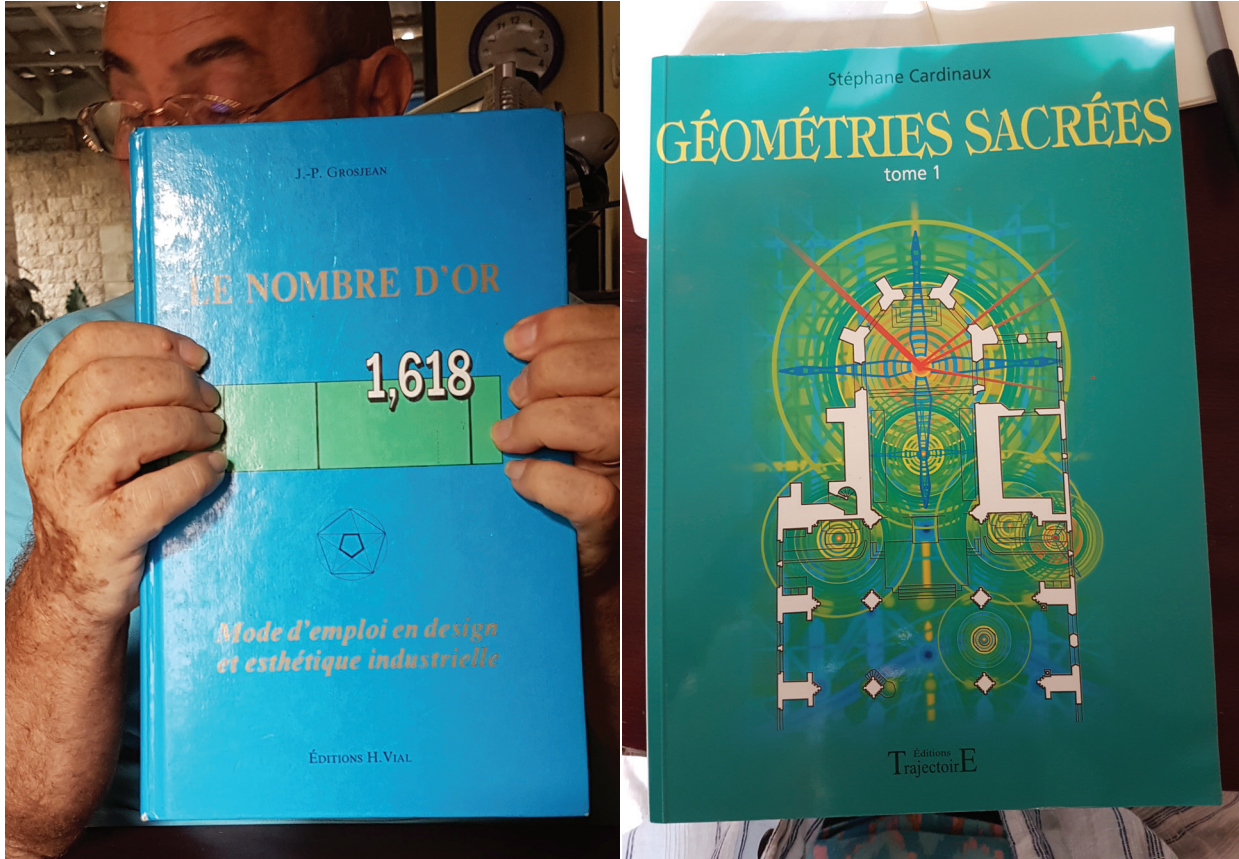


fig. 5.13 Michel Tabourel's recommended books

Source: Author's own image

home. As we delve into the conversation surrounding Borobudur and the influence of energy, Michel brings out a series of books, and a small “L” shaped metal tool. He explains to me that it is used to navigate the Armande Energy Network, as it detects the shifts from positive to negative energy, changing the direction of the “L” revealing the lines of the grid. He continues to explain as he filed through the pages of the many books spread across the table. Books of energy, sacred geometries, ancient constructions, and scientific discoveries began to direct our conversations, and very soon, his lecture-worthy spiel came together for me. Michel brought to my attention the deliberate locations of the world's sacred icons, the energy networks at play, the importance of intention, and the disclosure. What happened to be a chance meeting, motivated me to delve deeper into my explorations of the spiritual and architectural worlds with a new outlook.



fig. 5.14 Roadside statues in Bali

Source: Author's own image

STATUES AS MEMORY TANKS

One of the beautiful things about spirituality in Bali, Indonesia is the constant visual reminder of the link that ties the people together, the belief and full dedication to the Buddha. With Buddha statues and icons everywhere you look, there's an undeniable unity. Similarly, after each of the prayers of 6:00am, 12:00pm and 6:00pm, offerings are brought out on a platter, consisting of flowers, rice, sweets, incense, and holy water, and are placed in the Kelir (the little temple dedicated to holding offerings). The streets are filled during these times with the people presenting these offerings, sprinkling holy water among the offerings, praying, and placing the offerings. Though each of these acts are done independently, there is a shared spirit among the people as they are participating in the same traditions with the same mindset. This is a very similar phenomenon that is found in the Borobudur Temple as the monks participate in their rituals. The statues and relics of Buddha also provide the same sense of unity amongst the people, as explained in the streets of Bali.



fig. 5.15 Sewu Temple, Selogryio Temple, Pura Taman Ayun, Prambanan Temples Source: Author's own images

SPIRITUAL SPACES OF INDONESIA

Traveling through the diverse towns of Indonesia, I have encountered many places of spiritual importance from Masjids to Hindu temples to Buddhist temples. Each space presents a different personality, and opportunity to engage with it. As a woman, Masjids were experienced from the sound of the prayers echoing through the landscape and occasionally the external facades of the buildings. Hindu Temples usually consist of multiple smaller temples, each used for different purposes, mainly conveying 'The Creator', 'The Preserver' and 'The Destroyer'. These temples are usually observed from the exterior, with several nooks for offerings. As a tourist, Hindu temples were observed from the exterior of the gates as only practitioners were allowed to approach them. The bottom two temples are Hindu — Pura Taman Ayun otherwise known as The Royal Family Temple is to the left and the Prambanan Temples are to the right. Lastly, Buddhist temples allow for the highest amount of interaction as they are usually fully open to practitioners and tourists alike, on the temple grounds and interior rooms and halls, and exude an overwhelmingly positive energy. The top two temples are Buddhist —the Sewu Temple to the left and the Selogryio Temple to the left.



fig. 5.16 "Special Guest Waisak 2017"

Source: Author's own image

"SPECIAL GUEST" PASSES

We awoke on the ninth of May to a bright day. As usual, we had our itinerary and breakfast prepared for us by Nurudin, with the ending of the day bringing us to the Mendut Temple to witness the preparations for Waisak. I had applied for a research permit several months prior and it had been denied, Nurudin set up a meeting for me at the Archeology office. Breakfast that morning was full of hope that we would somehow use our host's connections to our advantage. The time came to head towards the office. As we arrive at the office, the lady who seemed to be in charge came out and greeted us, in her hands, my printed and highlighted application for the research permit. We sat down and spoke with her, using our driver as an interpreter when needed, She had mentioned the extensive process they engage in to release research permits and that my application does not comply with their process. After several minutes, she calls in the director of conservation. He explained that by using the word "research" in the application, it automatically made it more difficult to obtain the permit. By using research to describe



fig. 5.17 Entrance to the Borobudur Conservation Office

Source: Author's own image

my task, opposed to the “gathering of information,” I was saying that I would take the information and using it through my own interpretations and for my own advantage, something they did not seem comfortable with. I had explained to them the purpose of my visit again and again. Rony, the director, called the head office of the National Authority, as well as the UNESCO office to work out some sort of deal for me to visit the temple through this pass. After the call, he returns with a pad of paper, asking me to write down my itinerary for my time there so they could know my whereabouts at all time. After recording the information, Rony hands me two “Special Guest” passes for my mother and I. He mentions that any issues of access would be solved with these passes or a simple phone call. He took us to the security office and took our photograph and told the guards to remember our faces. Afterwards, all of the security offices of the Buddhist temples in the area were called and our photos and names were distributed in the same manner. Rony proceeded to give us a tour of all of the sites and offices in the Borobudur grounds, then sent us off to the Mendut Temple to partake in the preparatory practices.



fig. 5.18 Borobudur Waisak stage being assembled

Source: Author's own image

DIRECTOR OF CONSERVATION

Following a morning in the office of Archeology, we had finally obtained our proper documentation for exploring the temple. Rony started us off with a tour of the temple itself. We began at the western side of the grounds where the stage was being set up for the following day at the Waisak Festival. I have to admit, I didn't not even recognize this space by night, nor was I able to properly locate myself in the vast grounds of the Borobudur Temple. We passed the empty stage and proceeded walking around to the east face of the temple. His demeanor visibly changed from the office to now. Rony had begun his career in the field, but in a different country entirely. You could feel the passion for conserving culture, but he admitted he still had so much to learn about this temple. We come up to the eastern staircase of Borobudur. As we followed Rony through the temple, he told us of the many struggles they have been facing through the conservation of Borobudur, one of which being the absence of any architects on the team comprised mostly of archaeologists. I found myself providing him with explanations of the things he was telling me through the tour, and even ended up passing on several book references.



fig. 5.19 Borobudur Stones still to be assembled

Source: Author's own image

STONE CONSERVATION STORAGE

We continued on throughout the temple with the stories of the conservation and Buddha, and eventually ended up at the Borobudur museum. We stood at the entrance with a sea of unmatched stones from the temple standing before us. Somehow, in the simplicity of their independence, that they were individually resting on a sacred ground, they each were delivered the responsibility of representing the iconic Borobudur Temple. This made it slightly overwhelming to be surrounded by the building blocks of such a majestic construction. Among the rectangular forms were statues of Buddha, some full, some just partial. These intensified the sensation even more. Once we entered the museum, filled with photographs of the conservation team, the temple discovered from the ash, and many statues, it felt like more of a documentation office than a museum. It contained statues as well from neighboring temples found on the Borobudur site. Architecture is used to preserve stories - in this case, to preserve the teachings of Buddha.

GLOSSARY

Definitions courtesy of Dictionary.com as to provide a modern, general understanding of the terms.

Affect

“To have an effect on , make a difference to.”

Awareness

“The state or condition of being aware; having knowledge; consciousness.”

Brain

“The part of the central nervous system enclosed in the cranium of humans and other vertebrates, consisting of a soft, convoluted mass of gray and white matter and serving to control and coordinate the mental and physical actions.”

Circumambulation

“To walk or go about or around, especially ceremoniously, circling the sacred object as an act of meditation.”

Conscious

“Aware of one’s own existence, sensations, thoughts, surroundings, etc.”

Consciousness

“The self awareness, the fact of awareness by the mind of itself and the world.”

Deism

“Belief in a God who created the world but has since remained indifferent to it.”

Doxa

“The learned, fundamental, deep-founded, unconscious beliefs, and values, taken as self-evident universals, that inform an agent’s actions and thoughts within a particular field.” (Pierre Bourdieu)

Embody

“To give a concrete form to; express, personify, or exemplify in concrete form”

Emotion

“A psychological state that arises spontaneously rather than through conscious effort and is sometimes accompanied by physiological changes; a feeling.”

Enlightenment

“Pure and unqualified knowledge.”

Haptic	“Tactile sensations and the sense of touch.”
Klesha-Mind	“The part of the self that identifies itself as “I”, any of the five hindrances to enlightenment, which are ignorance or avidya, egocentricity, attachments, aversions, and the instinctive will to live.”
Mandala	“A schematized representation of the cosmos, chiefly characterized by a concentric configuration of geometric shapes, each of which contains an image of a deity or an attribute of a deity.”
Mantra	“Any sacred word or syllable used as an object of concentration and embodying some aspect of spiritual power.”
Mimesis	“Imitation or reproduction.”
Mind	“The element, part, substance, or process that reasons, thinks, feels, wills, perceives, the totality of conscious and unconscious mental processes.”
Mindfulness	“A technique in which one focuses one’s full attention only on the present, experiencing thoughts, feelings, and sensations but not judging them.”
Pantheism	“The doctrine that God is the transcendent reality of which man, nature, and the material universe are manifestations.”
Panentheism	“The belief or doctrine that God is greater than the universe and includes and interpenetrates it.”
Panpsychism	“A theory that all matter has some form of consciousness.”
Perception	“The process by which an organism detects and interprets information from the external world by means of the sensory receptors, insight or intuition gained by perceiving.”

Phenomenology	“The movement founded by Husserl that concentrates on the detailed description of conscious experience, without recourse to explanation, metaphysical assumptions, and traditional philosophical questions, the science of phenomena as opposed to the science of being.”
Practitioner	“A person who is engaged in the practice something specified.”
Proprioception	“The unconscious perception of movement and spatial orientation.”
Prostration	“Meditative practice through a series of postures, to cast (oneself) face down on the ground in humility, submission, or adoration.”
Religion	“A set of beliefs concerning the cause, nature, and purpose of the universe, especially when considered as the creation of a superhuman agency or agencies, usually involving devotional and ritual observances, and often containing a moral code governing the conduct of human affairs.”
Ring of Fire	“The linear zone of seismic and volcanic activity that coincides in general with the margins of the Pacific Plate.”
Ritual	“Prescribed, established, or ceremonial acts or features collectively, of the nature of or practiced as a rite or ritual.”
Sentience	“A sentient quality or state, feeling or sensation as distinguished from perception and thought.”
Spirituality	“Incorporeal or immaterial nature, predominantly spiritual character as shown in thought, life.”
Stupa	“A domed edifice housing Buddhist relics.”
Synesthesia	“A condition in which one type of stimulation evokes the sensation of another, as when the hearing of a sound produces the visualization of a color.”

Temonos

“In Greek antiquity, the enclosure of a sanctuary, the holy ground belonging to the god and governed by special rules, or the sacred precinct at a cult center.”

[*Archaeology Wordsmith*. [https://archaeologywordsmith.com/lookup.php?terms=temenos.](https://archaeologywordsmith.com/lookup.php?terms=temenos)]

Theism

“The form of the belief in one God as the transcendent creator and ruler of the universe that does not necessarily entail further belief in divine revelation”

Transcendental phenomenological reduction

“The act of suspending judgment about the natural world to instead focus on analysis of experience.”

Waisak/Vesak

“A Buddhist holiday observed to commemorate the Birth, Death and Enlightenment of the Buddha.”