

Introduction



Fig. 1. View of portable shrine on ceremonial vessel within the Seto Inland Sea, Itsukushima Shrine, Hiroshima, Japan, 1168 CE.

"Architecture is the dialogue between humans and their environment," said my friend and architecture professor Alexander Suryandono as we walked through the streets of Yogyakarta, Indonesia. Alex's words resonated within me and made me ask a series of questions that informed my research on architecture used for religious pilgrimage. If architecture can be understood as the built manifestation of humans' dialogue with their context, then how can architects make this conversation sacred? How can designers create spaces that dislodge people from their normative experiential channels? The following analysis is an effort to elucidate the ways in

which architecture creates sacred experiences, utilizing pilgrimage as a theme to unite the analysis of four hallowed structures from four distinct time periods and cultures.

This essential question of how architecture embodies sanctity is becoming increasingly relevant to architects today. Religion is inextricably connected to culture. Everything from ancient architecture to contemporary politics and current events is impacted by religion and its practices, making it one of the most culturally pervasive subjects in the world. This is not likely to change any time soon. Currently, over 84% of the world's population is affiliated with a religion, and this number is expected to increase to 88% by 2050.¹ Over 5.75 billion people depend on architecture to create sacred experiences, making religious architecture integral to the preservation of culture. Religious architecture is one of the oldest and most pervasive building traditions, and pilgrimage presents key developments in history that are critical to understanding architecture's role in creating sacred experiences. In a time defined by the speed of information and the deterioration of the attention span, creating sacred experiences for the soon-to-be 6 billion people that seek them is a task of the utmost cultural significance.

The four structures selected for analysis represent three distinct religions and nearly 2,000 years of architectural development:

- Church of the Holy Sepulchre | Early Christianity
Architect: Various | Jerusalem, Israel
- Borobudur | Buddhism
Architect: Unknown | Yogyakarta, Indonesia
- Itsukushima Shrine | Shintoism
Architect: Unknown | Hiroshima, Japan
- Padre Pio Pilgrimage Church | Contemporary Catholicism
Architect: Renzo Piano Building Workshop | San Giovanni
Rotondo, Italy

Though specific architects are not known for the ancient structures, the analysis of the historical and cultural contexts reveals clues as to the designers' intent. By analyzing religious architecture through the lens of pilgrimage, I identify strategies that can be utilized by contemporary architects to help generate culturally-sensitive sacred experiences. My hope is that this report will be informative to persons of all backgrounds and contribute to the preservation of the essential cultural amenity of sacred architecture moving forward.

Notes

1. "Global Religious Futures," *Pew Research Center*, accessed December 16, 2017.

Church of the Holy Sepulchre

The crisp light of a Middle Eastern morning washes over the walls of Jerusalem's Old City. The scuffling sound of my feet echoes off the monumental limestone blocks of the ancient Jaffa Gate as I enter the compressive streets of the city. The narrow corridors are empty at this hour; the color-coded doorways of street vendors are barred shut, and the stained walls of this ancient labyrinth enjoy a rare moment of pause. Amidst the ubiquity of the limestone and the softness of the light, I am lulled into a state of expectation. Just when I seem to have the pattern of the limestone memorized, the wall to my left evaporates. In its place is a grand forecourt flanked tightly on three sides by more limestone structures. A set of 15' tall wooden doors creak in protest as they are opened at the hands of the gatekeeper who is dwarfed by the multi-leveled structure that stands behind him. He steps through the portal that he has just created and disappears into a thick void that can only be rendered by monolithic architecture such as this. The first visitors pour in, enveloped by the darkness that is dispersed throughout the structure. Transitioning from the compressive streets of the Old City to the cavernous interior of this hallowed structure, I am jarred into a higher state of awareness by the dramatic shift in scale. The bell in the adjacent clock tower signals the morning's mass. The city has the luxury of sleep, but the Church of the Holy Sepulchre's sacred spaces of darkness, compression, and allusion are replete with their daily pilgrims.



Fig. 1. View of entry sequence and parvis looking north, Church of the Holy Sepulchre, Jerusalem, Israel, 4th Century CE.

Located in the Christian Quarter of Jerusalem's Old City, the Church of the Holy Sepulchre contains sacred moments that are created by the pilgrims' spatially augmented understanding of their physical, historical, and spiritual contexts. In Christian thought, the Church of the Holy Sepulchre marks the location of Jesus of Nazareth's crucifixion, burial, and subsequent resurrection. The 4th-century church, like many of the structures that I analyzed in fulfillment of the Aydelott Fellowship, has witnessed numerous periods of destruction and reconstruction that culminate in its current form (figs. 2-5). The experience of the church is enriched by a variety of architectural

strategies, including varied ceiling heights, transitions from light to dark, and multiple opportunities for tactile interactions. From a complex interior sequence that communicates with the larger scale procession of the Via Dolorosa to ancient graffiti that connects contemporary pilgrims to the lineage of those that came before them, the architecture of the church is an armature for ritual and sanctity. By analyzing the Church of the Holy Sepulchre within its built and historic contexts, I demonstrate how the sacred experiences of the church are created by a multilayered procession, a celebration of darkness, and dislodgement of pilgrims' sense of time.

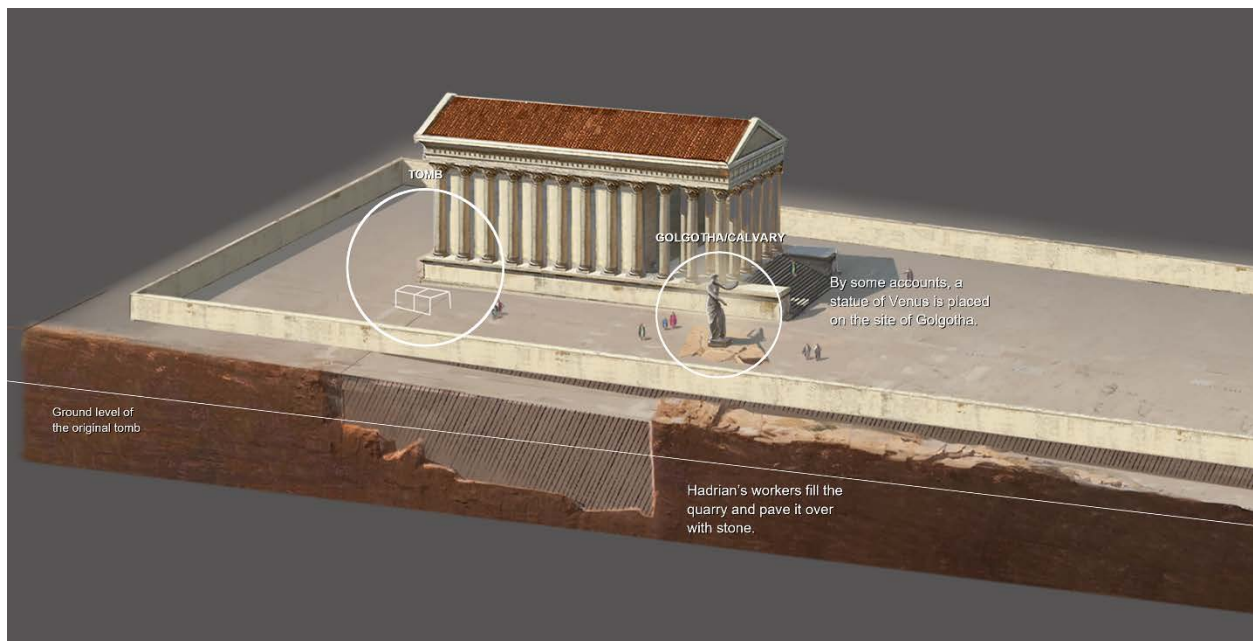


Fig. 2. Axonometric reconstruction looking north, Temple of Venus, Jerusalem, Israel, 135 CE.¹

Church of the Holy Sepulchre

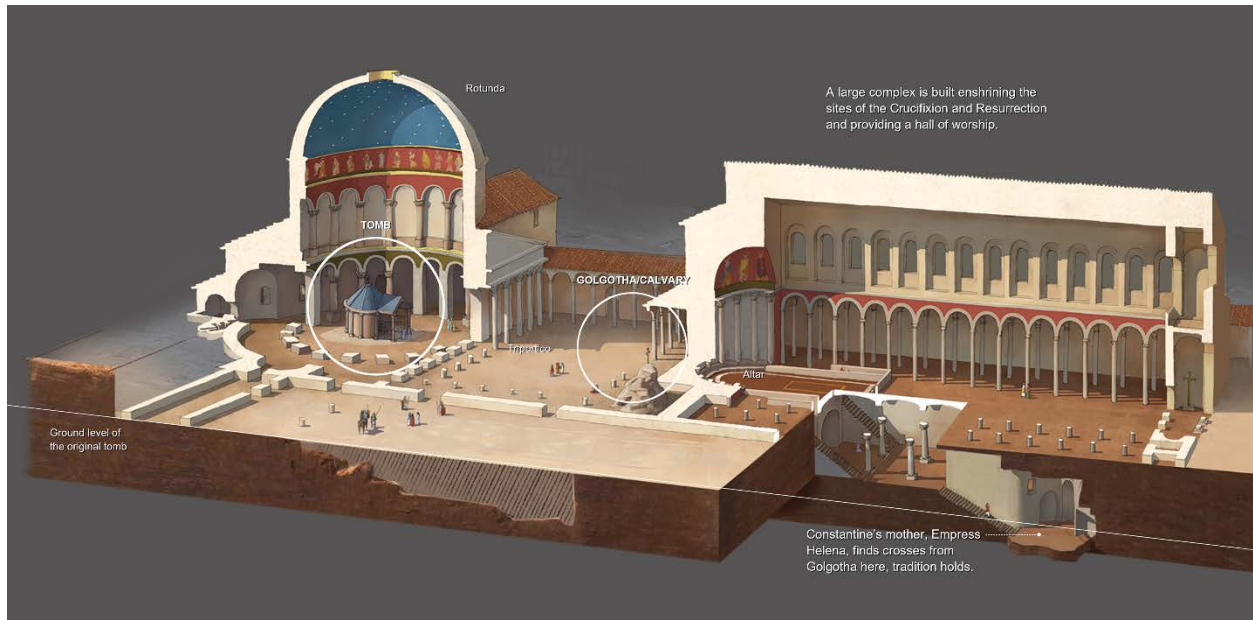


Fig. 3. Axonometric reconstruction looking north, Constantinian Church of the Holy Sepulchre, Jerusalem, Israel, 325 CE.²

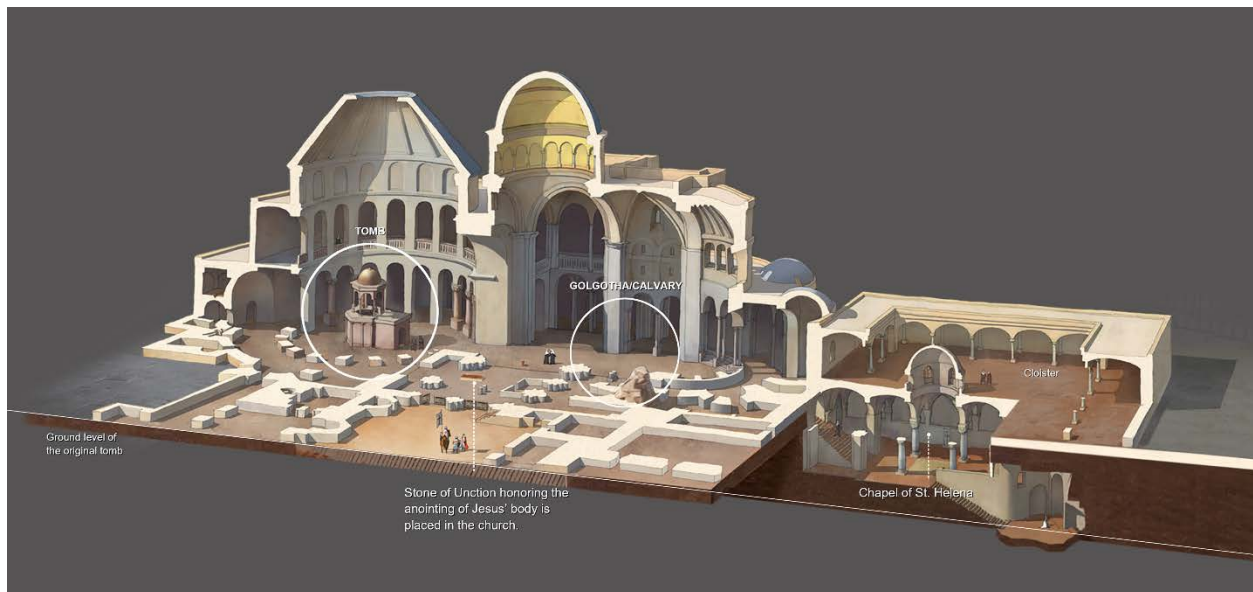


Fig. 4. Axonometric reconstruction looking north, Byzantine / Crusader Church of the Holy Sepulchre, Jerusalem, Israel, 11th century CE.³



Fig. 5. Axonometric reconstruction looking north, Modern Church of the Holy Sepulchre, Jerusalem, Israel, 2017 CE.⁴

The sacred experience of the church begins with the approach. While there are numerous ways to navigate through the city to the church, the Via Dolorosa, or Way of Suffering, is revered as the most sacred means of access to the Church of the Holy Sepulchre. Situated along the Via Dolorosa is a series of discrete markers that indicate the "Stations of the Cross." This sacred path is believed by many Christians to be the path that Jesus walked on his way to his execution. Thus, many pilgrims walk this procession, with some even beginning their journey in the Garden of Gethsemane, where Jesus was arrested according to Christian canon. Experientially, the street is like others in the Old City, with narrow, covered thoroughfares composed of monumental limestone. Typically, the stations of the cross that line the Via Dolorosa are not experienced as spatially defined

moments. In fact, the small discs that mark the procession go unnoticed by many a passersby.

Despite the experiential subtlety of the Via Dolorosa, the pilgrims that I interviewed in my documentary film suggested that the experience of the Church of the Holy Sepulchre begins at the First Station of the Cross. "Walking the Via Dolorosa on the way to the Church of the Holy Sepulchre is first and foremost a way to prepare you for the church itself," said Sam Johnson, a pilgrim from Michigan. Sam suggested that walking the Via Dolorosa allowed him to "participate in Christ's own suffering", citing the confusing, compressive, and kinetic route as experientially consistent with the ancient journey of Jesus to his execution.

Sam's thoughts were echoed by other pilgrims, and they indicate an important experiential condition of compression and speed that ultimately heightens the sense of arrival at the Church of the Holy Sepulchre. Rather than robust experiential spaces that would create moments of pause along the procession, the discreet signs that mark the Stations encourage movement. Conversely, the visit to the Church of the Holy Sepulchre is characterized by moments of intense stillness and solemnity, which are engendered by the spatial arrangement of the church. This shift in experiential scale and processional speed is a pervading motif in the Church of the Holy Sepulchre. From the design of the Via Dolorosa's signage to the kinetic and compressive experience of the corridor, the approach to the Church of the Holy Sepulchre is integral to framing the sacred experiences within the church itself.

As an antithesis to this large-scale sequence that encourages movement, the church's interior procession is characterized by moments of viscous darkness and spatial expansion that accentuate the sanctity of stillness. Contrary to the light-saturated conditions found in most Western churches, darkness is celebrated as light's equal within the Church of the Holy Sepulchre. Like other architectural strategies within the church, this juxtaposition of light and dark is evident at multiple scales. At the scale of the city, the dark, cool space of the church's interior offers contrast to the intensely reflective environment of the Old City's streets. The disparity of light between the exterior and interior is so great that it is difficult to document through photography or film, as the eyes of both the camera and visiting pilgrims struggle to adjust to the decreased luminance.

The effect of this visual threshold is astounding. Upon entering the church, visitors are denied visual access to any architectural features other than those illuminated by the light streaming in from the main doors. The Stone of Unction (in honor of Jesus' embalment) is directly on axis with the main portal and marks the farthest extent of the light's reach. The surrounding darkness creates momentary tunnel vision within the visitor, with the Stone of Unction as the focal point (fig. 6). For the first time on their journey, pilgrims are encouraged to be still rather than to keep moving. By switching scales from a hurried half-mile-long procession to a strategically illuminated 40-foot journey to the Stone of Unction, the Church of the Holy Sepulchre's entry sequence functions as a phenomenological threshold that jars visitors into a higher state of awareness.



Fig. 6. View of darkness surrounding Stone of Unction looking toward entry portal, Church of the Holy Sepulchre, Jerusalem, Israel, 4th century CE.

The juxtaposition between light and dark is paired with varying ceiling heights throughout the church that signal scalar shifts, continually heightening the pilgrims' understanding of the structure. Turning left from the Stone of Unction, visitors are greeted with a relatively compressive stereotomic space where the only source of light is a wax-laden basin of candles at the center. This space further compresses the experiential scale of the architecture and focuses visitors' attention again to this special moment of slowness.

Immediately following this moment of darkness and compression is the luminous and soaring Rotunda of the Anastasis. This space again

highlights a moment of experiential contrast as visitors, their eyes now fully adjusted to the darkness of the church, occupy the grandest and brightest space in the composition. In addition to denoting the hierarchical importance of the Rotunda, the vastness of this domed space also serves as a spatial antithesis to the most compressive experience of the church, which occurs in the Edicule.

The Edicule, believed to house the Tomb of Jesus, is a small freestanding structure composed of spaces that gradually decrease in height until pilgrims are kneeling beside the tomb. Aside from two small ovular apertures in the Edicule's entry space, the massive walls of the structure remain uncut. Candles provide the only illumination within the structure, their amorphous tongues of light dancing on the roughly-hewn walls of the compact space. After passing under two massive stone lintels, each one lower than the last, pilgrims kneel beside the tomb in complete silence. The Edicule's thick walls, lack of openings, and increasingly compressive spaces create an atmosphere of solitude within this holy of holies that was unmatched in the remainder of my travels. Just as the church's entry sequence offered silence and pause when compared to the Via Dolorosa, the Edicule offers complete tranquility relative to the acoustically active Rotunda of the Anastasis that engulfs it.



Figs. 7-9. Moments of darkness strategically pierced by light, Church of the Holy Sepulchre, Jerusalem, Israel, 4th century CE.



Fig. 10. Oculus of Rotunda of the Anastasis with light highlighting roof of Edicule, Church of the Holy Sepulchre, Jerusalem, Israel, 4th century CE.

In addition to the juxtaposition of darkness and spatial compression, the level changes and decorum of the church also create moments of sacred pause through narrative allusions. In the preceding discussion, I described how many pilgrims are drawn to the Stone of Unction first before continuing onward toward the Rotunda. While this is indeed the route that many pilgrims take through the church, I contend that the narrative sequence begins from above the Stone at the Chapel of Calvary. The discrepancy between the narrative sequence and the common sequence is the result of nearly two millennia of constant alterations through various architectural eras. The most significant of these changes followed the church's destruction in the 11th century. With only portions of the Rotunda's walls left standing, both Byzantine architects and 12th-century Crusaders redesigned the ruined church, including the entry sequence (figs. 2-5). Thus, while the building marks the sequence of Jesus' death and resurrection, it was as much a product of historical circumstance as it was intentional design. Nevertheless, the spatial organization and mosaic decorum suggest that the narrative procession begins in the Chapel of Calvary.

The Chapel of Calvary houses the Altar of Golgotha, a lavishly decorated object that is believed to mark the summit of the ancient hill where Jesus' crucifixion took place. If the contemporary pilgrims' sequence through the interior of the church began here, their procession would be narratively consistent with Jesus' own journey to his tomb. This contention is further supported by the fact that the first of the final four Stations of the Via Dolorosa is located in this raised chapel. This is yet another connection between

the interior procession and the larger scale procession of the Via Dolorosa. Finally, the 11th century mosaics that are strategically placed throughout the church add validity to this sequence by reinforcing the hallowed narrative of Jesus' death (figs. 11-12).⁵ From the level change that symbolizes the ascent of Golgotha to the continuation of the Via Dolorosa to the detail of the mosaics, the architecture of the church harbors sacred experiences that are created by allusions to the final sequence of Jesus' life.



Figs. 11-12. Crucifixion mosaic of Chapel of Calvary; view of Stone of Unction from Chapel of Calvary, Church of the Holy Sepulchre, Jerusalem, Israel, 4th century CE.

The juxtaposition of experiential scales within the Church of the Holy Sepulchre generates moments of sanctity that are characterized by an altered state of awareness. From the darkness that creates a focal point on the Stone of Unction to the narrative allusions that evoke memories of Jesus of Nazareth's crucifixion, the church is enriched with moments that dislodge visitors from their normative experiential state. While these elements contribute to the church's sacred

experiences, the ways that the architecture facilitates interactions between past, present, and future pilgrims heightens this sense of sanctity and distinguishes the church from others in this analysis.

Though the term "pilgrim" became increasingly difficult to define throughout my travels, a major part of pilgrimage in each culture that I studied was the concept of kinship. Within this project the term kinship describes the aspect of pilgrimage whereby present pilgrims can engage with both past and future pilgrims to achieve a greater sense of belonging. This concept is best explained in Valsiner's and Branco's *Cultural Psychology of Human Values*:

... pilgrims encounter not only evocative religious artifacts and symbols but also more mundane traces of fellow believers that constitute important aspects of the pilgrimage field. The pilgrimage route becomes a locus of collective memory and activity where the past becomes present...⁶

The intangible relationship between pilgrims of the past, present, and future is crucial to pilgrimage and presents architecture with the difficult task of navigating the complexities of time. Thus, the most sacred architecture operates not only in the three familiar spatial dimensions, but also in the experiential fourth dimension of time.

In the Church of the Holy Sepulchre, this sacred kinship is achieved through both intended and unintended moments of diachronic interaction with the ancient architecture. The clearest example of designed interactions with time is perhaps found in the compressive space that separates the Stone of Unction from the Rotunda of the Anastasis. As previously mentioned, the focal point of this dark space

is a small basin that receives votive candles from pilgrims. What distinguishes this basin from those in other churches is its surprisingly temporary nature. Due to the volume of pilgrims that visit this church, the basin is stripped of candles on an almost hourly basis, partially erasing the evidence of the day's pilgrims. This temporariness is accentuated by the design of the basin itself, which reads as a freestanding furniture piece rather than a permanent fixture in the church. What is beautiful about this basin is the juxtaposition between this swift cleansing and the wax that remains in the basin throughout the day. In this way, even when no candles are present, pilgrims are aware of those that came before them through the level of molten wax in the iron basin.



Fig. 13. View of pilgrim placing candle within iron basin, Church of the Holy Sepulchre, Jerusalem, Israel, 4th century CE.

While this designed basin offers present visitors kinship with other pilgrims at the scale of the day, the unintended moments of Medieval graffiti in the Chapel of St. Helena connect pilgrims across centuries. The Chapel of St. Helena is a Constantinian-era space that was entirely reconstructed by the Crusaders at the beginning of the 12th century.⁷ Here, centuries-old Armenian graffiti in the form of small crosses etched into the chapel's westernmost wall captures the chapel's four-dimensional nature. Though small and hardly noticeable, this feature gives a permanent visual and haptic connection to the lineage of past pilgrims, expanding contemporary visitors' experience of the church and generating a feeling of sanctity. Just as moments of meditative pause are formed by shifting scales and speeds relative to the Via Dolorosa, this ancient graffiti enhances the pilgrim's understanding of time by facilitating diachronic interaction.



Fig. 14. Armenian graffiti from Medieval period within Chapel of St. Helena, Church of the Holy Sepulchre, Jerusalem, Israel, 16th century CE.

The sacred experiences of the Church of the Holy Sepulchre are sustained by the shifting of spatial scales and processional speeds, the juxtaposition of light and dark, and the articulation of pilgrims' awareness of time. Through these motifs, phenomenological threshold and scalar juxtaposition emerge as prominent strategies through which sanctity is created. These strategies, which are engendered by the architecture, dislodge pilgrims from their normative state of awareness, creating memorable moments of pause and contemplation within the composition. From the Via Dolorosa helping Sam "participate in Christ's own suffering" to the Medieval Armenian graffiti that makes pilgrims stop in the middle of staircase, the Church of the Holy Sepulchre's sacred spaces thrive on moments of experiential dislodgement.

Notes

1. Fernando G. Baptista and Rocio Espin, "Hadrian's Temple," *National Geographic*, December 2017.
<https://www.nationalgeographic.com/magazine/2017/12/was-this-jesus-tomb/>
2. Fernando G. Baptista and Rocio Espin, "Constantine's Church," *National Geographic*, December 2017.
<https://www.nationalgeographic.com/magazine/2017/12/was-this-jesus-tomb/>
3. Fernando G. Baptista and Rocio Espin, "Crusaders' Church," *National Geographic*, December 2017.
<https://www.nationalgeographic.com/magazine/2017/12/was-this-jesus-tomb/>
4. Fernando G. Baptista and Rocio Espin, "Church of the Holy Sepulchre," *National Geographic*, December 2017.
<https://www.nationalgeographic.com/magazine/2017/12/was-this-jesus-tomb/>
5. Martin Biddle et al., *The Church of the Holy Sepulchre*, 46-49.
6. Angela Uchoa Branco and Jaan Valsiner, *Cultural Psychology of Human Values*, 99.
7. Martin Biddle et al., *The Church of the Holy Sepulchre*, 51.

Borobudur

Viscous equatorial air mixes with feelings of anxiousness as I sift my way through the pre-dawn darkness of a Central Javanese morning. Lush foliage forms a verdant roof high above me, the edges of the canopy barely distinguishable against the moonless sky. I stumble as my feet find the first in a long series of stone steps that appear to fade into oblivion only a few feet above me. Above me, pinpricks of light turn into patches of constellations as I climb the stairs, the trees falling away to either side of me. Suddenly, the stairs end and the dark canopy dissolves to reveal the full expanse of the cosmos above. An impossibly massive form rises before me, its dark silhouette indistinguishable from the undulating shadow of the distant mountains. I approach the center of the mass and find yet another set of stairs, though the uneven and roughly-hewn risers indicate that these stairs are ancient. A ubiquitous light washes over the structure as I begin my ascent, revealing outlines of sculptural reliefs framed by blocks of stone as the sun struggles to break the horizon behind me. The familiar forms of Buddhist stupas surround me at the summit of the mountainous structure. As dawn manifests, the veils of darkness and mist are lifted to reveal the grand landscape that stretches before me. Nearby mountains frame every perspective, but the form of the volcanic Mount Merapi captures my focus, its hazy peak challenging the sun for command of the landscape. As Borobudur witnesses yet another sunrise, the forms of the stupas meld with the adjacent mountains, creating a dichotomy between the natural and designed landscape that enshrouds the ancient structure with sanctity.



Fig. 1. View eastward of Mount Merapi from the summit of Borobudur, Borobudur, Yogyakarta, Java, Indonesia, 8th-9th centuries CE.

Nestled within a verdant valley of Central Java, Indonesia, Borobudur evokes sanctity through allusion and narrative. Constructed between the late 8th and early 9th centuries CE, Borobudur is one of the largest Buddhist structures in the world.¹ The monument joins a robust lineage of temples, or *candi*, that are scattered throughout Indonesia. The religious significance of Borobudur is as nuanced as its complex history, but many Indonesians understand the monument as a “place of meditation, not of worship.”² This distinguishes the structure from others in this analysis, as its function is focused on cognitive reorientation rather than the worship of a given deity. The monument

is composed of stacked terraces that diminish in breadth as visitors ascend the structure, invoking the form of the agricultural terraces that populate the Indonesian countryside. More than a means of ascension, these terraces harbor a large portion of Borobudur's sanctity - the ambulatory galleries. Lodged between the extended walls of the terraces, the galleries contain sculptural reliefs that detail the original Buddha's (Siddhartha Gautama) progression from *dukkha* (insatiable craving) to *nirvana* (cessation of craving), along with other important narratives. By investigating how Borobudur interacts with its physical, metaphysical, and cultural contexts, I showcase that the monument creates sacred experiences through natural allusions, meditative movement, *mandala* symbolism, and architectural subtlety.



Fig. 2. View of Borobudur from west lawn, Borobudur, Yogyakarta, Java, Indonesia, 8th-9th centuries CE.

A portion of the sanctity of Borobudur is rooted in the monument's architectural allusions to the hallowed mountains that envelope the site. For the Javanese, mountains are ancient spiritual and cultural staples that remain relevant even today. The ancient Javanese (as well as contemporary Indonesians) were certainly aware of the rhythms of the landscape, heightened by the numerous active volcanoes scattered across the country. Many of these volcanic spires remain active, including the revered Mount Merapi located less than 20 miles from Borobudur. According to ancient inscriptions, prehistoric Javanese even referred to temples as mountains, establishing a clear relationship between the built and natural landscape.³ It was within this culture of mountain reverence that Borobudur was designed, which likely inspired the mountain-like form of the structure. The monument itself functions as a veneer atop the natural landscape, with a hill forming its substructure but remaining hidden from view.

Borobudur's connection with the surrounding mountains and the distant Mount Merapi goes beyond mere mimicry. While the basic form of Borobudur alludes to the surrounding mountains at the scale of the site, the internal procession of the monument is filled with moments of experiential expansion engendered by views of the mountainous context. As described in the introductory anecdote, Borobudur is situated atop a small hill flanked on all sides by tall, dense trees. The height of the hill itself is not enough to surmount the reach of the trees, creating a space in which the visitor has an inwardly focused experience akin to the experience in a cloister. Though views from the ground plane are centered on the monument itself, this focus

begins to shift as visitors ascend the terraces. Upon reaching the second ambulatory gallery, views outward over the tree canopies begin to materialize. For the first time since beginning the approach, visitors are allowed to see the greater context, heightening their awareness of the expansive landscape beyond. This condition is accentuated by the placement of Buddha statues along the procession, which face outward toward the landscape rather than inward toward the viewer (fig. 3). Since the majority of the sculptures in the early part of the ascent are interiorly focused, the reorientation of the Buddha disrupts the visitor's expectation and briefly changes the focus of the procession. As observed at the Church of the Holy Sepulchre, the heightened state of awareness caused by experiential expansion is a hallmark of sanctity, though at Borobudur its application is more attuned to the landscape.



Fig. 3. View eastward of mountains surrounding monument, with Buddha articulating view to landscape, Borobudur, Yogyakarta, Java, Indonesia, 8th-9th centuries CE.

In addition to the orientation of the sculptures, the widths of the galleries' corridors diminish as pilgrims ascend the structure, creating a sequence of continual compression that primes visitors for the experience of the summit. I propose that this compressive strategy is calibrated to the anticipated meditative mindset of the pilgrims at each terrace. When pilgrims enter the first gallery, the width of the corridors is ample and the height of the balustrade is low. This creates a space of minimal experiential investment, as the sculptural narrative stands at a distance from the visitor and views outward are given hierarchy by the outward-facing Buddha statues. Ascending to the third and fourth galleries, visitors find themselves in narrower corridors flanked on both sides by walls that largely block external views. This literally brings the narrative closer to the pilgrim, encouraging a more tactile and focused attention. In place of a normative threshold (which is not feasible due to the exterior nature of the monument), the increasingly compressive corridors of the galleries help pilgrims enter a focused state of awareness. This progressive state of meditation is reinforced by the complexity of the narrative itself. The lower gallery contains the more accessible *Lalitavistara* and *Jatakamala* (events of Siddhartha Gautama's life) while the upper ambulatories feature the more complex *Gandawyuha*. The experience of this sequence is one of compression and focus, making the ensuing space atop the monument even more impactful.

The climax of this procession occurs at the summit of the monument, when visitors are finally allowed to interact with the regional axis that orients Borobudur. The apex of Borobudur is

composed of circular terraces that contain 72 individual stupas, each with a Buddha statue. While the symbolic importance of this space will be addressed later, it is important to note the experiential discrepancy between this expansive plateau and the more compressive galleries below. Smaller sculptural stupas surround this space, creating a juxtaposition in scale between these framing stupas and the formidable silhouette of Mount Merapi (fig. 4). For the first time in the procession, visitors are allowed panoramic views of the surrounding landscape. This uninhibited view reveals an east-west orientation that coincides with the sacred axis to Mount Merapi. In this moment, pilgrims understand that Merapi, which has been obscured up to this point by trees and the high walls of the galleries, acts as the regional anchoring point for the composition. As visitors look down upon their tree-covered procession along this monumental axis, their state of awareness is again elevated as the scales of the axis and procession are juxtaposed against the scale of the architecture.



Fig. 4. View of juxtaposition between stupas and Mt. Merapi, Borobudur, Yogyakarta, Java, Indonesia, 8th-9th centuries CE.

The sanctity of this axis as an organizational principle is evident elsewhere in the architecture of the country, from the scale of the city to the scale of the *candi*. Alexander Suryandono, professor of architecture at the University of Gadjah Madah in Yogyakarta, spoke about the power of this axis as a datum during one of our conversations. Using the city of Yogyakarta (one of the nearest cities to Borobudur) as an example, Alex illustrated the significance of the axis between Mount Merapi to the north and the ocean to the south. He suggested that the city itself, which is situated almost exactly halfway between the sea and the mountain, was located here in part because of the symbolic power of the axis. In addition to the city's specific location, significant structures like the royal palace are designed with respect to this organizational datum, reinforcing the hierarchical significance of the axis in architectural form. Major streets in Yogyakarta (most importantly, the one that leads to the palace) are also oriented to this datum, which hints at the processional nature of this sacred trajectory (fig. 5).

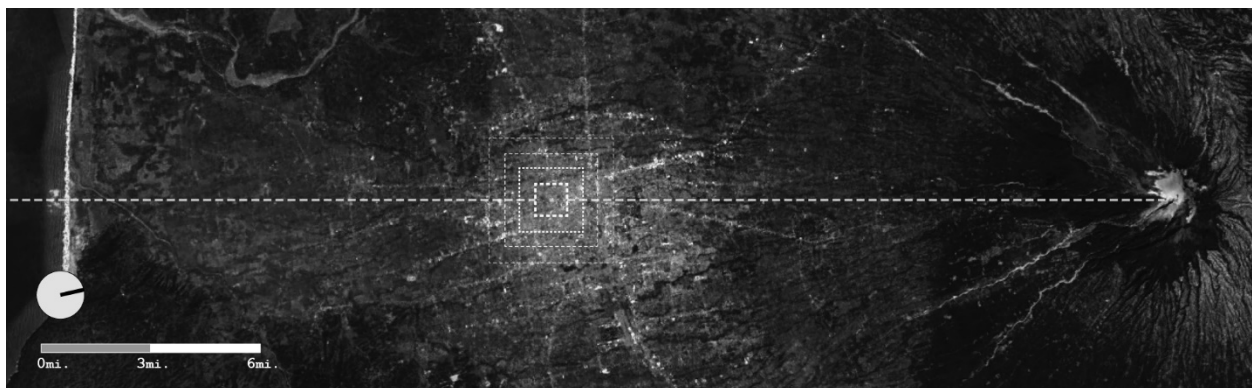


Fig. 5. Diagram of regional axis with regard to Yogyakarta, Borobudur, Yogyakarta, Java, Indonesia, 8th-9th centuries CE.⁴

This axiality can be observed at numerous *candi* (temples) that are stylistically linked to Borobudur and that create an experiential consistency in the network of pilgrimage sites. I propose that this subtle axial theme is discernable by the observant pilgrim and that this architectural motif creates an experientially consistent network of pilgrimage structures leading to Borobudur. This proposal of an experiential network is supported by the fact Borobudur's eastern approach was originally populated with other Buddhist structures, including *Candi Mendut* and *Pawong*, which still exist today.⁵ These *candi* also featured an east-west orientation that was likely intentional, further supporting the contention of an articulated network of pilgrimage structures.⁶ Approaching Borobudur through this network would have created important moments of dislodgement in which pilgrims' memories of past sites were juxtaposed against their current experience of the monument. From the royal palace of Yogyakarta to the *candi* that frame the approach to Borobudur, the organizational axis of Mount Merapi is pervasively sacred.

While the regional axis informs the experience of Borobudur at the scale of the site, the "interior" experiences are articulated around the organizational principle of the *mandala*. The *mandala*, a foundational concept in both Hinduism and Buddhism, is a meditative tool that renders the universe in diagrammatic form.⁷ The appearance of the *mandala* varies, but nearly all iterations of the sacred diagram exhibit a focus on the center with concentric geometric forms populating the perimeter (fig. 6). Though the idea that Borobudur functions as an architectural *mandala* was first proposed in the early

20th century, it is a crucial concept that is widely upheld in both academic and religious communities today. The stacking of the terraces adds a third dimension to this architectural *mandala*, creating a vertical axis at the center of the composition that is accentuated by the large stupa that marks the summit. While the *mandala* alone is significant, movement becomes the crucial component that activates this sacred diagram and allows Borobudur to fulfil its purpose as a facilitator of meditation.

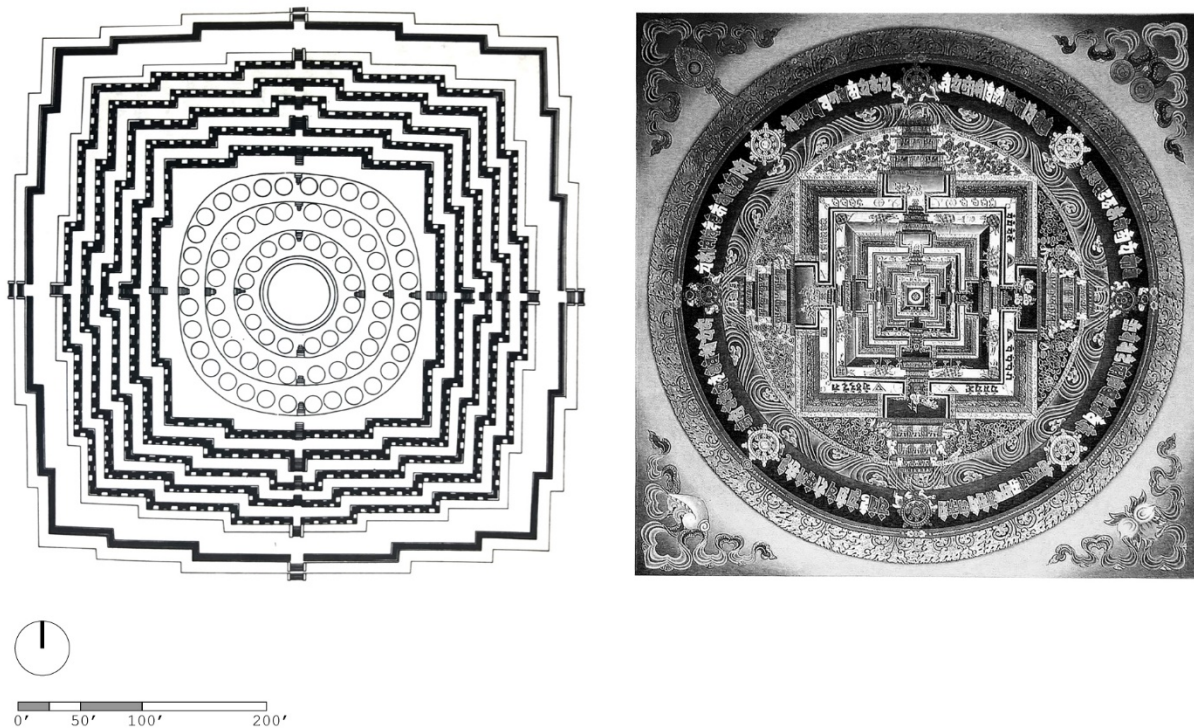


Fig. 6. Plan of Borobudur⁸ compared with *mandala* (from Tibet),⁹ Borobudur, Yogyakarta, Java, Indonesia, 8th-9th centuries CE.

To encourage movement throughout the monument, the design of Borobudur's galleries creates moments of discovery that pull the pilgrim through the composition. While it is possible to access the summit of the monument without exploring the galleries, the staggered design of the passageways generate intrigue in the passerby. Rather than straight corridors that reveal the entire procession from a single perspective, the galleries feature multiple right-angle turns that create the illusion of dead ends. In this way, the 200'-long corridors present pilgrims with multiple opportunities to "turn the corner", one of the most experientially potent tools in architecture. The innumerable turns also serve to disorient the visitor from the



Fig. 7-12. Views of staggered corridors with sculptural narratives, Borobudur, Yogyakarta, Java, Indonesia, 8th-9th centuries CE.

cardinal directions, making the revelatory moment where the monument's relationship to Mount Merapi is unveiled even more potent.

While the continuous movement serves to create moments of discovery, the design of the monument gives prominence to the sculptural reliefs by subduing the apparent role of the architecture. Perhaps the most evident way in which the architecture is intentionally subdued is in the treatment of materials. Impressively, the structure is composed almost entirely of andesite stones from local quarries. Barring slight variations in the blackness of the stones, this material is visually banal. Furthermore, its repeated implementation establishes a rhythm that lulls the passerby into a state of comfortable expectation. The stones even seem to display their natural texture, minimizing the evidence of human intervention within the materials. This is in stark contrast to the Church of the Holy Sepulchre, where colorful mosaics and precious metals dispersed the ubiquity of the limestone.

This effort to suppress the apparent role of the architecture is also evident in the details associated with rainwater management. The runoff system is simple, with sculptural scuppers placed at the corners of the walkways. These scuppers pass water from terrace to terrace, with the water eventually deposited in a gutter that surrounds the base of the monument. It is almost impossible to identify this system, as the sculptural scuppers are artistically indistinguishable from the plethora of figures that adorn the walls of Borobudur (fig. 14). Archeologist Jacques Dumarçay also takes note of this aspect of the design in his seminal work *Borobudur*, suggesting

that "The architecture is only a framework for sculpture. It is essentially a carved ensemble and architectural values play a minor role."¹⁰

Most importantly, the effects of this architectural subtlety are evident to the pilgrim, as evidenced by my on-site interview with Michael Gregory, a former Buddhist monk. In our discussion, Michael suggested that "This [Borobudur] has no functional value in the world. It only has functional value of the highest order." Michael continued to say that pilgrimage at Borobudur is a practice by which to "bring in the tradition as a living narrative". Clearly, the connection between pilgrims and the narratives present in the reliefs of Borobudur is of paramount importance. Whether it is the incitation of movement, ubiquitous material palette, or the discreet handling of rainwater, the subtle architectural nuances of Borobudur give prominence to the sacred narrative.



Figs. 13-14. Views of subtle rainwater management system, Borobudur, Yogyakarta, Java, Indonesia, 8th-9th centuries CE.

Essentially, the architecture of Borobudur harbors sacred experiences wrought with allusions to nature and meditative motion. This is accomplished through strategic use of spatial compression and expansion as well as continual moments of discovery that compel the pilgrim to perpetually "turn the corner." Overarching design motifs such as scalar juxtaposition and temporal dislodgement (as seen in the Church of the Holy Sepulchre) are also evident at Borobudur. The juxtaposition of the architecture and the landscape creates meaningful scalar discrepancies while the sculptural narrative allows pilgrims to participate in an ancient dialogue. Unlike the Church of the Holy Sepulchre, the architecture of Borobudur is simultaneously instrumental to the monument's sacred experience yet visually understated to highlight the sculptural narrative. This is consistent with the Buddhist minimalistic ethos. From the regional axis of the sacred Mount Merapi to the detail of the scupper, Borobudur is a haven for meditation and sanctity.

Notes

1. Jacques Dumarçay, *Borobudur*, trans. Michael Smithies, 4.
2. *Ibid.*, v.
3. John Miksic, *Indonesian Heritage: Ancient History*, 58.
4. Diagram is the original work of the author. Google Satellite image used as underlay.
5. Jacques Dumarçay, *Borobudur*, trans. Michael Smithies, 29-30.
6. *Ibid.*, 36
7. *Ibid.*, 40-41.
8. *Ibid.*, 17.
9. Kosi Gramatikoff, "Tibetan Mandala Painted in the Sera Monastery," *Ancient History Encyclopedia*, September 7, 2013.
10. Jacques Dumarçay, *Borobudur*, trans. Michael Smithies, 31.

Itsukushima Shrine

The bellow of the ferry's horn erupts across the choppy waters of the Seto Inland Sea as I climb aboard the vessel, out of breath after my jog from the train station. I check my watch as the ferry disembarks, unsurprised that the ship is departing on schedule just like every other form of transit that I encounter in Japan. It is as if the entire country is synchronized with an unspoken ancient rhythm. The thought dissolves as we begin our brief journey across the sea to Miyajima, one of the many verdant islands that populate the Seto Inland Sea. The aroma of salt and the dampness of the ocean breeze envelop me as Miyajima continues to expand before me, the boat's hull striking a tempo against the rough waters left behind by Typhoon Noru. Memories of the mainland fade as my mind synchronizes with the maritime meter of the boat cutting through the waves. As the ferry turns, I catch a glint of red against the lush backdrop of Miyajima's mountainous topography. Two monumental timber columns capped by two equally massive lintels rise from the waters of the sea. This sacred portal, the Great "floating" *Torii* of Itsukushima, looms over the water and frames views of the low-lying shrine poised elegantly on the boundary between land and sea. The shrine appears to be slowly sinking into the waters of the Inland Sea. The tide is coming in. Typhoon Noru has just passed through the city, but the Itsukushima Shrine is ready to host the most sacred ceremony of the year.



Fig. 1. View of Great *Torii* as the tide rises, Itsukushima Shrine, Hiroshima, Japan, 1875 CE (most recent reconstruction, gate originally from 1168 CE).

Sited on the hallowed island of Miyajima within the Seto Inland Sea, the Itsukushima Shrine is the epitome of sanctity through architectural solidarity with nature. The shrine is one of the foremost sacred structures of Shinto, Japan's indigenous religion. While oral traditions date the founding of Itsukushima to the late 6th-century CE, the current design originates from 1168 CE during Japan's Heian Period.¹ Dedicated to three important *kami*,² the shrine is composed of a series of pavilions interconnected by covered walkways. These corridors emanate like orthogonal tendrils from the central pavilion of the complex, where the small portable shrine that houses

relics of the three *kami* is held. These relics are integral components in Shinto shrines, as they are understood as earthly residences of the hallowed *kami*.³ Perhaps the most compelling aspect of the shrine is its physical connection to the landscape, as it sits atop pilotis that interact with the changing tides. By analyzing how the Itsukushima Shrine physically, spiritually, and culturally addresses its context, I demonstrate that the shrine sustains sacred experiences through accentuated thresholds and synchronicity with the rhythm of nature.

As described by the introductory anecdote, one of the most important aspects of the Itsukushima Shrine is the approach and the multi-scaled thresholds that define the sequence. The most immediate and impressive threshold within this sequence is the Inland Sea itself. In order to fully understand the importance of the sea as a threshold, it is helpful to describe the journey of many contemporary pilgrims and tourists leading up to the expanse of water. More than any other structure in this analysis, the experience of the Itsukushima Shrine has been augmented by the increasing speed of transportation and contemporary urban growth. Miyajima is located approximately 10 miles southwest of Hiroshima's central business district. This separation means that most visitors arrive at the ferry terminal via local train from Hiroshima, passing through numerous residential districts along the way. Residences, powerlines, and vegetation block views of the sea along this procession, making the moment that visitors arrive at the shores of the sea one of euphoria and experiential expansion. The procession to the ferry terminal from



Fig. 2. View from local train showcasing experiential quality of the inland approach to Miyajima, 2017 CE.

the train station is even subterranean, further accentuating the moment of expansion experienced by visitors as they await the ferry.

Heightened by this scalar contrast, traversing the sea then becomes a powerful moment of cognitive cleansing that is consistent with Shinto purification practices. Motohisa Yamakage, the 79th Grand Master of Yamakage Shinto, describes purification as “the underlying philosophy” of Shinto beliefs. Though there are many types of purification, Yamakage identifies *misogi*, or water purification, as the “cornerstone of Shinto”, even suggesting that *misogi* was originally practiced in the ocean.⁴ With this in mind, the siting of the Itsukushima Shrine becomes even more significant and strategic. By siting the shrine on the northeastern side of Miyajima, the designers

of Itsukushima simultaneously remove the shrine from the profane while placing the structure within view of the mainland. This generates intrigue in the mainland passerby, creating visual invitation while also tapping into the cognitive cleansing properties of the ocean to distinguish the shrine as sacred.

No longer confined to a steel tube roaring through the countryside, contemporary visitors enjoy a slower open-air transition to the island that allows them to more directly interact with nature. Though the inland approach to the shrine was different in the 12th century, the experiential effects of this slower maritime transition would have been evident even then. This reinforces the fundamental concept of *misogi*, elevating the shrine's effectiveness and imbuing it with sanctity from over a mile away.

In addition to creating visual invitation while maintaining sacred separation, the siting of the shrine also accentuates the natural threshold of Miyajima's landform. As visitors approach the shrine via the Inland Sea, it becomes clear that the structure sits



Fig. 3. View from ferry across Inland Sea to Miyajima (Mount Misen at right), Itsukushima Shrine, Hiroshima, Japan, 1168 CE.

within a topographical cradle that itself acts as a threshold. The landmass of the island flanks the Itsukushima Shrine as if reaching out to offer it protection. This creates a yet another threshold that envelops pilgrims and generates an intimacy of scale that is not felt in the vast expanse of the Inland Sea (fig. 4). Although the current paths of the ferries divert from this cove and dock further north, the shrine was historically approached through this avenue by all visitors. This approach is still in use today in the rich ceremonies of the shrine, which will be discussed in the following pages.



Fig. 4. View of Itsukushima Shrine showcasing topographical threshold (looking north from Mt. Misen), Itsukushima Shrine, Hiroshima, Japan, 1168 CE.

After experiencing thresholds at the scale of the ocean and the scale of the island, visitors are finally invited to experience a threshold at the scale of the shrine in the Great *Torii* itself. *Torii* are revered in the Shinto tradition as integral portals of purification. The Great *Torii* of Itsukushima is no exception, and it historically acted as a gateway through which visitors could access the sacred island of Miyajima at large. Thus, the Great *Torii* presents the important third shift in experiential scale, augmenting the regional procession through a fleeting moment of spatial compression. Its design reflects this, with the monumental members distinguishing the gateway from the rest of the shrine. While thresholds of various scales make for an impactful approach, the way in which the Itsukushima Shrine accentuates the rhythm of nature embodies sanctity in its purest architectural form.



Fig. 5. View of ceremonial vessels (*kangen*) passing through Great *Torii* during 2017 Kangensai Festival, Itsukushima Shrine, Hiroshima, Japan, 1168 CE.

By precisely calibrating the shrine to interact with the waxing and waning tides of the Seto Inland Sea, the designers of the shrine accentuate the endemic sanctity of nature while highlighting different scales of time. The shrine itself occupies the curvilinear boundary between the land and sea, with wooden pavilions sitting atop timber pilotis that allow the structure to project into the inlet. During low tide, the shrine hovers a few feet above the ground plane, and the Great *Torii* (more than 500 feet from the shrine) becomes accessible by land. This fleeting ambulatory connection between the shrine and the *torii* is visceral (figs. 6-7). The extensive negative space between the two structures celebrates the Japanese tradition of sacred void while eliciting thoughts of the Inland Sea's somber vastness.



Figs. 6-7. View of the *torii* (top) and the shrine (bottom) looking northwest and southwest respectively, Itsukushima Shrine, Hiroshima, Japan, 1168 CE.

While the waning tide evokes feelings of sacred void, the interaction between the waxing tide and the shrine generates moments of sublimity. As the tide draws in, the monumental *torii* begins to “float”, its scattered reflection visually softening the base of the portal. Soon the pilotis of the shrine begin to disappear, their eroded faces slipping into temporary oblivion beneath the water’s surface. Just as it seems certain that the boardwalks and pavilions of the shrine will be overtaken, time halts, the entire composition entering a state of suspension. It is during this fleeting climax of the high tide that the full sanctity and architectural precision of the Itsukushima Shrine can be understood.



Figs. 8-13. Various views of the rising tide’s interaction with the architecture, Itsukushima Shrine, Hiroshima, Japan, 1168 CE.

Wooden walkways glide parallel to the water's surface, creating an infinite shadow gap between the timber and the water that accentuates the separation. Eroded stones that lead to a lantern mark the exact level of the high tide as they have for centuries, the water lapping over their fissured surface. Porous colonnades replace opaque walls to allow visual and climatic permeability. At this point, the shrine becomes an extension of the natural landscape rather than an object within it. This condition reflects ancient Shinto traditions where shrines were secondary to the inherent sanctity of a site.⁵ From the precise leveling of timber members and stepping stones to high levels of porosity, the architecture of the shrine serves to accentuate the "arcadian rhythm"⁶ and inherent sanctity of nature.

The multiple thresholds present in the shrine's approach along with the architecture's interaction with nature's various rhythms imbue the Itsukushima Shrine with a pervasive aura of sanctity. Through the shrine's interactions with the dynamic landscape of the Seto Inland Sea, pilgrims are made aware of the arcadian rhythm of the tides. Because this rhythm operates at a different interval than the normative human experience, pilgrims become dislodged from their own sense of time. This chronological motif that unites the structures of this analysis is most evident at the Itsukushima Shrine during the Kangensai Festival.



Fig. 14. View of ceremonial procession approaching Great *Torii* during 2017 Kangensai Festival, Itsukushima Shrine, Hiroshima, Japan, 1168 CE.

The Kangensai Festival is an annual maritime celebration that is over 800 years old. The 14-hour festival consists of a naval ballet and the parading of Itsukushima's *mikoshi* (the portable shrine that houses Itsukushima's sacred relic) to other Shinto shrines with proximity to the Inland Sea. In addition to highlighting key aspects of Shintoism such as the mobility of *kami* and synchronicity with nature, the Kangensai Festival accentuates the shrine's critical architectural elements such as ritual space and phenomenological thresholds.

The ceremony begins within the central pavilion of the shrine, where ritual singing is a prelude to the transportation of the *mikoshi*. In this most sacred space, the architecture strikes a balance between opacity and transparency. Opaque timber-frame walls contain the ceremony from three sides, but the wall that faces the ocean dissolves into a veil of latticed woodwork and open air. This creates a ritually intimate space while also articulating views outward along the central axis of the composition (fig. 15). The design of this directional space underscores the visual connection to the long approach sequence, allowing pilgrims to view the Great *Torii*, Inland Sea, and the mainland beyond from within the most sacred space. In this moment of juxtaposition between the scale of pilgrims' journey and the scale of the shrine's holiest space, the sequence of phenomenal thresholds can be fully appreciated. Immediately adjacent to this space, the *mikoshi* awaits its impending departure.

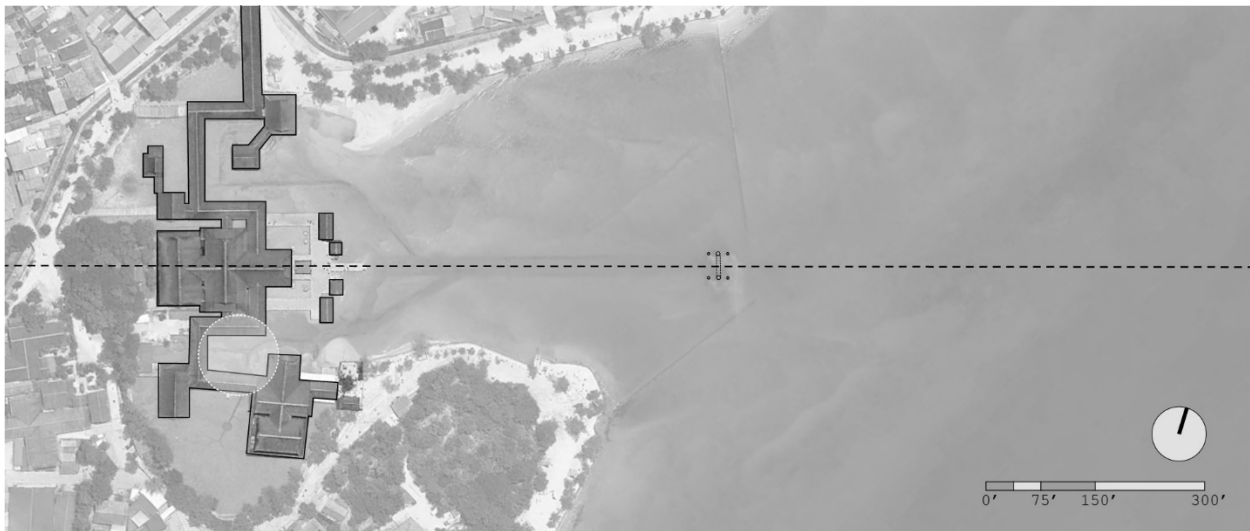


Fig. 15. Diagram showcasing shrine's potent axis and artificial cove (highlighted) used for Kangensai Festival, Itsukushima Shrine, Hiroshima, Japan, 1168 CE.⁷



Fig. 16. View of *mikoshi* awaiting its seafaring departure, Itsukushima Shrine, Hiroshima, Japan, 1168 CE.

While the axis from the Inland Sea to the sacred inner shrine visually highlights the sequence of thresholds, the parading of the *mikoshi* allows priests and pilgrims alike to inhabit these experiential portals. Once the ceremonial vessels are moved beyond the *torii* and the tide subsides, the *mikoshi* is carried from the shrine to the *torii* across the potent void by Itsukushima's high priests. What is architecturally significant about this procession is the very absence of architecture. Despite its ambulatory potential, there is no boardwalk or pathway (as there is elsewhere in the shrine) lining the expanse between the shrine and the *torii*. For the first time in the entire procession, pilgrims are invited to directly interact with the landscape without an architectural intermediary. In this way, pilgrims



Fig. 17. View from Seto Inland Sea looking south toward shrine, *torii*, and Mt. Misen, Itsukushima Shrine, Hiroshima, Japan, 1168 CE.

become part of the landscape rather than an object within it, just as the shrine does at high tide. The magnitude of this moment is heightened by the colossal *torii*, now accessible by foot.

Although the sacred experience of this procession is created by the absence of a direct architectural intermediary, the sequence would be impossible without the strategic juxtaposition of the shrine and *torii*. Without the anchor point of the *torii*, the axuality and accompanying potency of the procession would be lost in the chasm between the land and sea. The *torii* acts as a clear reference point, reversing roles from the shrine's gateway to become the ocean's gateway. Again, the architecture becomes secondary to the inherent

sanctity of the landscape, reinforcing this motif. After passing through the *torii*'s tree-like posts, the procession continues into the sea itself, bolstering the importance of this tactile interaction with nature. From here, the *mikoshi* is loaded onto the sacred vessels and begins its own procession around the bay, bringing a portable component of the shrine's architecture to other bay-side communities.

The climax of the festival's interaction with the shrine comes at the end of the ceremony, when the architecture's role as an armature for ritual is exemplified through the maritime ballet. Near midnight, just as the tide reaches its apex, the vessels emerge from the darkness of the sea and pass through the *torii*. After depositing the *mikoshi*, the boats pull into the artificial cove created by the shrine's outstretched walkways (fig. 15). In this tight aquatic space the boats spin and perform for the crowd of cheering pilgrims and visitors, their hulls narrowly missing the eaves of the shrine in a display of naval skill. Without the architecture, the potency of this ritual would be lost in the expansive darkness of the inlet. In this way, the walkways serve not only a circulatory function, but a spatial one as well, creating an aquatic space that is activated by this annual sacred ritual and the tides.

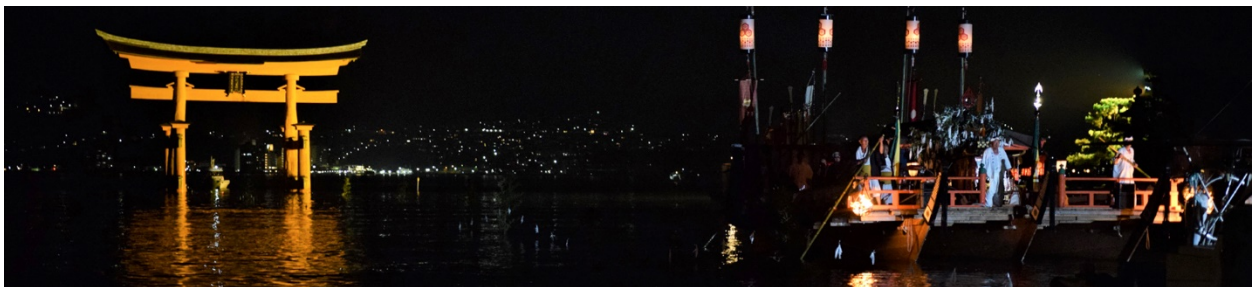


Fig. 18. View from shrine towards Great *Torii* as vessels return at the end of the Kangensai Festival, Itsukushima Shrine, Hiroshima, Japan, 1168 CE.



Fig. 19. View of the ritual space for maritime ballet that is created by high tide, Itsukushima Shrine, Hiroshima, Japan, 1168 CE.

Whether it is the layering of phenomenological thresholds, the display of synchronicity with the tides, or the spectacle of ancient rituals, the Itsukushima Shrine's sacred experience is created through the architecture's relationship to nature. This is supported by Shinto's tradition of reverence for nature, and the strength of this shrine's architectural connection to the landscape is unmatched in the other structures of this analysis. Though the overarching themes of processional speed, scalar juxtaposition, and temporal dislodgement that are present in the previously analyzed structures are also found here, they are implemented in a way that is consistent with the

Japanese architectural tradition. What distinguishes the Itsukushima Shrine from the Church of the Holy Sepulchre and Borobudur is the great extent to which these motifs are directly and inextricably related to the landscape. Essentially, it is the architecture's seemingly simple response to the infinite complexities of nature that generates sanctity within the Itsukushima Shrine.

Notes

1. Joseph Cali and John Dougill, *Shinto Shrines*, 235.
2. *Kami* is the term used to refer to the deities of the Shinto pantheon. The three daughters of the sun goddess Amaterasu are enshrined at Itsukushima, making it especially hallowed. Amaterasu is an incredibly important kami in Shinto, revered throughout Japan at various shrines (including the famous Ise Shrine). See Aisaburo Akiyama, *Shinto and its Architecture*, 105.
3. Stuart D.B. Picken, *Essentials of Shinto*, 359.
4. Motohisa Yamakage, *The Essence of Shinto: Japan's Spiritual Heart*, trans. Mineko S. Gillespie, Gerald L. Gillespie, and Yoshitsugu Komuro, 88-92.
5. *Ibid.*, 64-65.
6. "arcadian rhythm" is a term developed within the course of research that describes the time signature of nature. It is evident in multiple scales, from the waxing and waning tides to trees' dormancy cycles to annual rainfall events.
7. Diagram is the original work of the author. Google Satellite image used as underlay.

Padre Pio Pilgrimage Church

Unfaltering rows of olive trees and partially ruined granaries meld into a greenish blur as I rumble through the Apulian plain of rural Southern Italy. Sprawling, infinite, and stark, the landscape's topographic ubiquity and consistent rhythm are calming. The number of turns the bus makes as it finds every neglected pothole seems irrelevant; my view of the landscape remains unchanged. Just as I approach the cusp of slumber, I am gently tugged into the back of my seat by a change in direction. A high plateau comes into frame. We have begun our ascent. Soon the earthen palette of San Giovanni Rotondo's clay-tiled roofs fills my vision as the bus continues to climb. The bus stops mid-ascent at a small collection of awnings that functions as the bus station. I must continue the climb on foot. Small sculptures of the Stations of the Cross, juxtaposed against touristic shops brimming with Padre Pio memorabilia, guide my procession. After passing the 14 Stations in swift succession, I ascend a set of stairs to find an older church and small piazza rising before me. A massive cross in the distance pulls me to the left corner of the piazza, where the paving changes from dark brick to white Apricena limestone. Suddenly, for the first time in almost an hour, I am walking downhill. I turn the corner and find myself at the summit of a grand downward-sloping piazza, with pilgrims and olive trees populating the artificial landscape. The patinaed form of Renzo Piano's Padre Pio Pilgrimage Church awaits within the valley of this piazza, eager to receive pilgrims into its sacred space of perpetual motion.



Fig. 1. Renzo Piano Building Workshop, view of church looking south from the slopes of Mt. Gargano, Padre Pio Pilgrimage Church, San Giovanni Rotondo, Italy, 2004 CE.

Situated on a rural plateau within the Foggia province of Southeastern Italy, Renzo Piano's Padre Pio Pilgrimage Church houses experiences of sanctity that are created through perpetual motion and invitational porosity. The church is dedicated to its namesake Padre Pio, who was a longtime resident of San Giovanni Rotondo and is one of the most recent saints to enter the Catholic Canon. Padre Pio Pilgrimage Church hosted eight million pilgrims per year as of 2008, eclipsing the Church of the Holy Sepulchre and even St. Peter's Basilica in the Vatican City in terms of numbers of pilgrims.¹

In addition to the impressive number of pilgrims, the contemporary nature of the project makes it especially significant within the scope of this analysis. Designed between 1991 and 2004, this project is the only one of the structures in this analysis that was explicitly designed for the contemporary pilgrim. Padre Pio Pilgrimage Church thus became the architectural connection between the ancient structures already analyzed and the issues of the present. Renzo Piano's initial response to this commission exhibits the increasing challenge of generating sacred experiences within the present cultural climate. Initially, the Italian architect turned down the project, citing the difficulty of generating sanctity for over 6,500 pilgrims on a "profaned" site that was "spoiled" with tourism and commercialism.² Even Piano, one of the foremost architects in contemporary practice, is concerned with the issue of creating sacred space. This presents a few critical questions. After taking the commission, how did Piano respond to these concerns of "profanation" to create sacred experiences? Are the motifs of scalar juxtaposition, phenomenological thresholds, and sacred allusions that unite the ancient structures in this analysis present within a contemporary space of sanctity? In my analysis of this structure, I showcase that Piano utilizes the inherent sanctity of nature to combat the contemporary profanity of San Giovanni Rotondo. From inviting nature into the composition at key points to implementing perspectival parallax and structural levity on the interior, Piano encourages the pilgrim into perpetual motion and blurs the boundary between the church and the designed landscape.

Perhaps the most arresting characteristic of Piano's church is its distinct approach and its experiential separation from its urban context. As previously described, the major approach to the church from the old city of San Giovanni Rotondo is a constant ascent. This said, Piano's strategic location of the church at the site's westernmost corner serves two purposes: to activate the 2.5-acre piazza as an experiential buffer from the old city and to allow the church to occupy the lowest point on the site. This move is remarkably effective as visitors feel the gentle shift in slope that denotes the distinction between this procession and that of the old city. While the site slopes downward toward the church, Piano also implements chest-high walls that block views of the church's immediate surroundings and focus pilgrims' attention on the church itself, all while maintaining visual connection to the expansive landscape beyond. In this way, Piano crafts an artificial plateau within the natural

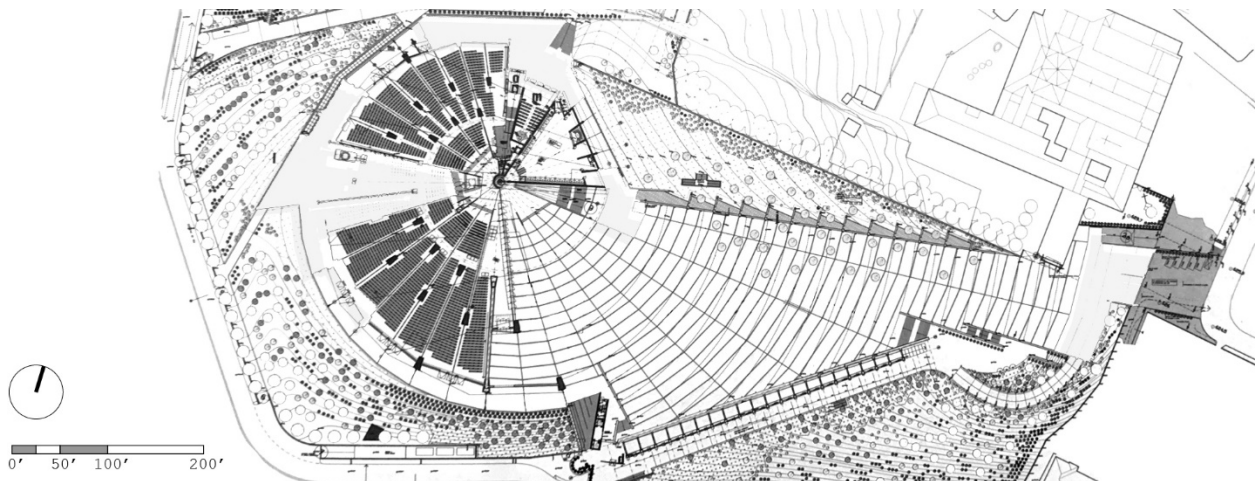


Fig. 2. Renzo Piano Building Workshop, plan of project showing piazza and designed landscape surrounding radial sanctuary, Padre Pio Pilgrimage Church, San Giovanni Rotondo, Italy, 2004 CE.³



Fig. 3. Renzo Piano Building Workshop, view looking westward across piazza to church, Padre Pio Pilgrimage Church, San Giovanni Rotondo, Italy, 2004 CE.

plateau of the Apennine foothills, creating a phenomenological threshold that is central to the initiation of sanctity. This kind of selective invitation of nature (whereby Piano invites certain aspects of the natural landscape into his own design) is especially effective in this “profaned” context, as it draws from the inherent sanctity of nature that seems to transcend culture. This strategy of selective invitation is a motif that Piano implements elsewhere in the project, including in the selection of materials.

The project is composed largely of Apricena limestone from a nearby quarry, creating a refined material palette distinct from the surrounding structures of the old town. Not only is the building itself composed of this limestone, but so is the piazza that frames the approach to the church. This material selection creates a clear correlation between the designed landscape and the church itself,

allowing them to read as a cohesive entity rather than as an object sitting atop a horizontal plane (fig. 4). The distinction between the church and its urban context becomes even clearer with the use of pre-patinaed copper as a roof material. The green hue of the roof compliments the foliage of the adjacent Mount Gargano as well as the miles of agricultural land that surround San Giovanni Rotondo while contrasting with the reddish roofs of the town (fig. 5). These allusions to nature are further reinforced by the placement of olive trees within the piazza approach (fig. 6). Piano thus visually connects the sequence of his designed plateau to the procession through the Apulian plain in the valley below. Again, Piano selectively invites aspects of the natural landscape into the design, connecting to the region via the Apricena limestone and patinaed roof while distancing the church from the palette of its urban context.

Just as the slope of the piazza draws pilgrims to the church, the radial arrangement and layering of the limestone arches encourage circumambulation that heightens moments of scalar juxtaposition within the sanctuary. Upon entering the church, pilgrims are greeted by a



Figs. 4-6. Renzo Piano Building Workshop, (from left to right) material contrast between sacred and profane structures; view of liturgical entrance with patinaed copper's relationship to Mt. Gargano; view through olive trees in piazza; Padre Pio Pilgrimage Church, San Giovanni Rotondo, Italy, 2004 CE

sprawling space with a radial focus on the altar (fig. 7). Two series of loadbearing limestone arches soar overhead, and many of them converge at the center of the composition, where Padre Pio's body is held in the crypt below. While the monumentality and materiality of the arches serve to denote this space as sacred, they also subdivide the space to provide visiting pilgrims with moments of intimacy. This is especially evident where the two series of arches intersect. Here, the arches frame smaller collections of pews, creating subtle moments of compressive intimacy in an otherwise cavernous space.

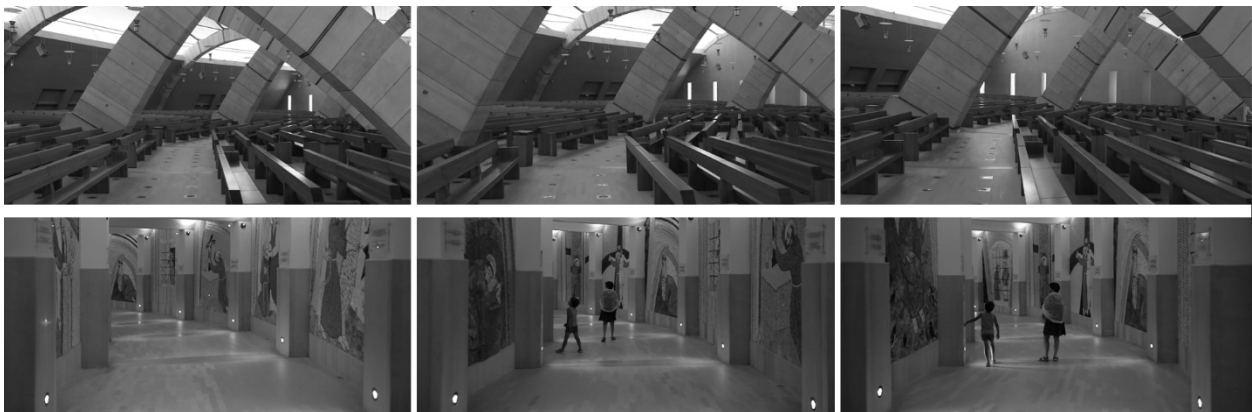


Fig. 7. Renzo Piano Building Workshop, view looking northward across sanctuary, Padre Pio Pilgrimage Church, San Giovanni Rotondo, Italy, 2004 CE.

While the arches subdivide the space and create moments of intimacy, they also encourage movement by presenting compelling moments of perspectival parallax. Due to the way in which the arches visually intersect, moving throughout the church changes the perceived

points of these intersections. This creates subtle moments of visual tension that compel the pilgrims to circumambulate along the line of the arches (fig. 8). In almost a week of daily visits to the church, I documented many pilgrims who engaged in constant movement while in the sanctuary. The symbolic power of circumambulation can be found throughout the history of the Christian tradition,⁴ and this movement is what ultimately directs pilgrims to exit the sanctuary and continue their orbital procession to the crypt below. Given that the final approach to the crypt is by a gently sloping circular ramp (fig. 9), I contend that Piano implemented perspectival parallax within the sanctuary to encourage the initiation of this circumambulation.

Complimenting the theme of perpetual motion is Piano's selective invitation of nature, which he maintains within the church by drawing elements of the Italian climate into the composition. I had the rare opportunity to witness this selective invitation during a thunderstorm. Since the church is located at the lowest point in the



Figs. 8-9. Renzo Piano Building Workshop, views of circumambulatory sequence and perspectival parallax within sanctuary (top); views of orbital ramp to crypt (bottom), Padre Pio Pilgrimage Church, San Giovanni Rotondo, Italy, 2004 CE.

site, it becomes a natural collection point for runoff. Rather than direct excess water away from the church, Piano embraces the rain, inviting the runoff into the church both physically and auditorily. As the rain descends on the site, the multifaceted copper roof provides a large catchment area for the collection of water. From here, the water travels to designed downspouts located at the corners of each roof plane. Most importantly, these downspouts are placed directly over the church's numerous entrances. After a few minutes of rain, gallons of water pour from these downspouts. The water passes over the seamless threshold of the portals, infiltrating the sanctuary to varying degrees before being deposited in one of the hundreds of drains incorporated into the ground plane of the interior.



Fig. 10. Renzo Piano Building Workshop, view of water infiltrating sanctuary, Padre Pio Pilgrimage Church, San Giovanni Rotondo, Italy, 2004 CE.



Fig. 11. Renzo Piano Building Workshop, view of interior drain where runoff water is collected, Padre Pio Pilgrimage Church, San Giovanni Rotondo, Italy, 2004 CE.

The effect of this sequence on the experience of the church is potent, as the water's impact on the surface of the limestone sends ripples of sound echoing through the cavernous interior. In a space with such a powerful center, this strategic invitation of nature creates a brief shift in focus to the exterior, expanding pilgrims' experiences and blurring the boundary between building and landscape. From creating an artificial valley within the piazza to populating the interior of the church with hundreds of drains (fig. 11), Piano's invitation of this rare climatic event connects pilgrims to the arcadian rhythm of the landscape, generating a feeling of sanctity.

The church also interacts with light in compelling ways. Piano's use of tectonic roof planes to mitigate the effects of direct sunlight within the structure reinforces the motif of selective invitation

while creating structural and chronological conundrums. Perhaps one of the most endemic architectural features of the project is the juxtaposition of heavy and lightweight structural elements.

Historically, the arch as a structural typology has been one of solidity and mass. Though architecture pioneers such as Louis Kahn and Rafael Moneo have modernized the loadbearing arch to some extent, integral elements such as the keystone, springers, and the opaque connection to the secondary structure have remained largely unchanged throughout history.⁵

In his first and only use of loadbearing stone to date, Piano challenges these expectations by separating the roof from the arches to invite diffuse light into the space. This is achieved by the use of visually light stainless steel "V props" that create a generous separation between the primary structure and the soaring roof form. The void between these structural systems is further accentuated by the continuous clerestory that circumscribes the sanctuary, filling the interior with light as it reflects off the limestone ground plane of the piazza (fig. 12). Where there should be massive stone, there is lightweight steel. Where the wall should continue to support the roof, there is delicate glass. Where there should be mass, there is light. These strategies undermine the fundamentals of structure, with the effect being the subtle generation of awe in the viewer.

The dissolution of expected structural elements is a motif in the project, evident even within the landscape that surrounds the church. The clearest example is in the arcade that defines one of the major processions to the church. Beneath the grand piazza to the



Fig. 12. Renzo Piano Building Workshop, view of arch with "V prop" and clerestory, Padre Pio Pilgrimage Church, San Giovanni Rotondo, Italy, 2004 CE.

south, Piano creates a shaded sequence that guides visitors to the summit of the project while also providing access to the subterranean program. Here, Piano uses thin steel plates (rather than stone) as springers, allowing for a generous light gap between the arch itself and the columns of the arcade (fig. 13). Again, Piano is using light to accentuate unexpected moments of levity, creating meaningful distinction between the church its "profane" context.



Fig. 13. Renzo Piano Building Workshop, view of arcade procession with the dematerialization of the springers imbuing a sense of sacred levity, Padre Pio Pilgrimage Church, San Giovanni Rotondo, Italy, 2004 CE.

While Piano strategically admits light into the church to accentuate these structural conundrums, he also denies direct sunlight in various spaces of the church, dislodging pilgrims from their sense of time. Though it is certainly possible to distinguish dawn from dusk from within the sanctuary, the intermediary hours of the day (roughly 10:00AM to 4:00PM during the summer) are indistinguishable from one another based solely on the quality of light. This is accomplished through the uniformity of the light within the church. While some contend that "too much light is admitted, so compromising the sacred atmosphere",⁶ I propose that using light to dislodge pilgrims from their sense of time can be just as potent as heightening their awareness of it.



Fig. 14. Renzo Piano Building Workshop, view of crypt during mass, Padre Pio Pilgrimage Church, San Giovanni Rotondo, Italy, 2004 CE.

This is especially true of the crypt that houses Padre Pio's remains (fig. 14). Though the design of the crypt has recently changed to include decorative mosaics, the exclusion of natural light was a design strategy from the project's inception. While attending mass in the crypt, pilgrims are denied access to the arcadian rhythm that locates them in the fourth dimension of time. After leaving the crypt, they are dramatically reinserted into this rhythm as they ascend a stair that brings them to the sun-saturated piazza. This type of chronological dislodgement jars pilgrims from their normative state of awareness, generating a feeling of sanctity in the process.

Ultimately, in designing Padre Pio Pilgrimage Church, Renzo Piano deploys strategies that are rooted in the rich history of hallowed architecture to generate sacred experiences within and around the church. Through major tactics of experiential distinction from the old city, restrained allusions to nature, and disengagement from time, Piano takes a stance against the profane in an effort to maintain the sacred. The overarching themes of speed and temporal dislodgement are incorporated much differently here than in the the Church of the Holy Sepulchre. Where the 4th century Christian church accentuates moments of pause and sharpens pilgrims' awareness of time, this contemporary church encourages perpetual motion and supresses pilgrims' chronological awareness.

In relation to the pervasive motif of architectural interactions with nature, both Borobudur and the Itsukushima Shrine highlighted the inherent sanctity nature by subduing the apparent role of the architecture. Conversely, Piano takes a more heavy-handed approach

through which a highly designed approach seems to remove pilgrims from the natural landscape, only to give it back at critical moments of potent sanctity (such as during a thunderstorm). From the careful arrangement of downspouts that control runoff to the overhanging roof and louvres that block most direct sunlight, Piano uses architectural filters to control the effects of the natural landscape on the church. Even strategies that seem like contemporary outliers such as the structural conundrums and the replacement of mass with light have roots in historical precedents such as the Hagia Sophia in Istanbul.

Whether the town of San Giovanni Rotondo is "profaned" or not, Piano created a thoughtful composition that instills the sanctity of nature within the designed landscape, albeit in a highly restrained manner. His use of the historical motifs of sanctity (scalar juxtaposition, phenomenological thresholds, allusions to nature, etc.) denote the apparently timeless nature of these strategies, validating them for use in the contemporary practice. In such a rapidly evolving world, Piano's exploration into the architecture of sanctity underscores the importance of the subject matter, providing an example through which to explore the complexities of creating hallowed spaces.

Notes

1. Padre Pio Pilgrimage Church is second only to Guadalupe in Mexico.
See Peter Buchanan, *Renzo Piano Building Workshop*, 192.
2. Sarah Amelar, "Against the Profane, the Commercial, and the Mundane," *Architectural Record* 192 no. 4, 184-195.
3. Peter Buchanan, *Renzo Piano Building Workshop*, 217. (Plan by Renzo Piano Building Workshop).
4. References to the power of circumambulation exist throughout the Christian Bible (such as the fall of Jericho in Joshua 6) as well as in ritual practices that focus on holy relics.
5. Though there are many examples of Kahn's provocative use of arches, his Indian Institute of Management is especially poignant. Rafael Moneo's National Museum of Roman Art is also noteworthy.
6. Peter Buchanan, *Renzo Piano Building Workshop*, 217.

The Architecture of Sanctity

Through this diachronic analysis of four religious structures and their associated pilgrimage practices, consistent themes became evident that outline what can be understood as the architecture of sanctity. Scalar juxtaposition, phenomenological threshold, temporal dislodgement, and both narrative and natural allusions emerge as consistent strategies at each of the structures analyzed. The continued use of these strategies over time accentuates their architectural potential in the contemporary discourse. Though the scope of this research is by no means exhaustive, I hope that the diversity of the structures and religions that were analyzed provides a database from which to pull architectural strategies for the creation of sacred experiences.

One way to understand sanctity is to see it as the product of an altered state of awareness whereby an individual is dislodged from their normative experiential rhythm. As engineers of experiences, architects have the ability to intervene in the creation of these sacred moments and the maintenance of culture. By using this analysis to ask more refined questions, I hope that contemporary and future designers can help create the sacred, culturally sustained dialogue in which nearly 6 billion people want to participate.

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