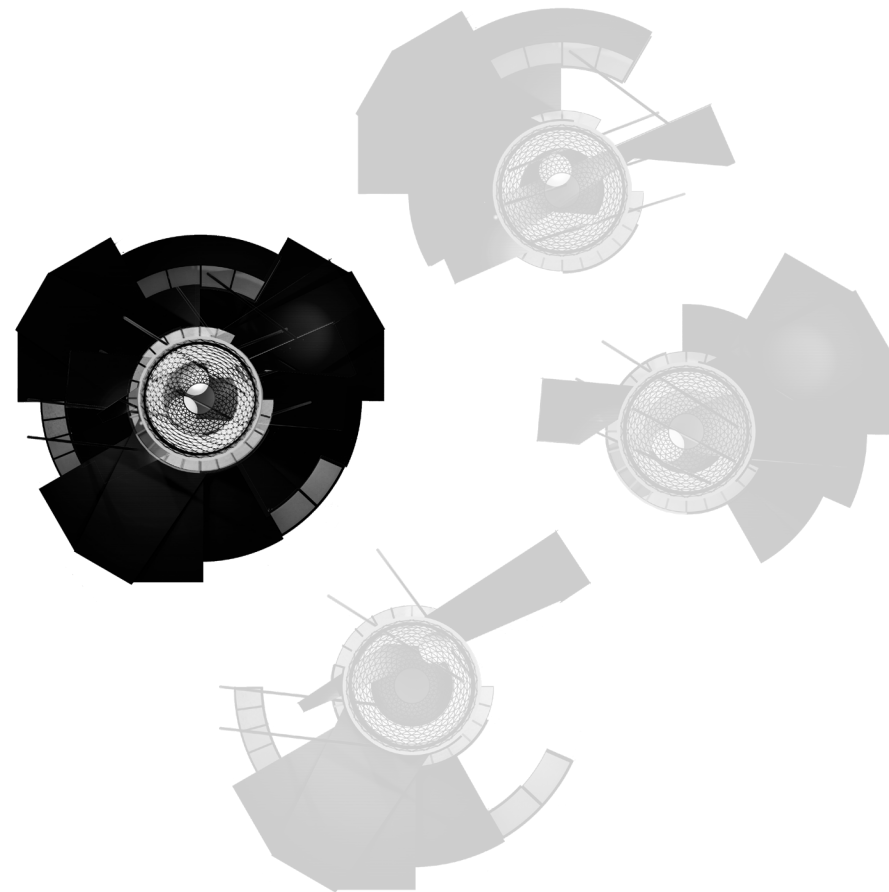


CONCERTARE:

AN ARCHITECTURAL REDISCOVERY OF SPIRITUAL
HARMONY IN A SECULAR WORLD



CONCERTARE: AN ARCHITECTURAL REDISCOVERY
OF SPIRITUAL HARMONY IN A SECULAR WORLD

SIGNATURE PAGE

A Design Thesis Submitted to the Department of Architecture and
Landscape Architecture of North Dakota State University

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of Architecture

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THESIS PROPOSAL



FIGURE 1: Human Cell Network

THESIS ABSTRACT

Every day, billions of tiny little miracles occur just to give us another breath. From a microscopic level of your heart getting the energy it needs to beat 100,000 times a day to the cosmic level of the rotation of Earth and its perfect distance from the Sun - that keeps us warm enough, but not incinerated - there is a chaos of neurons firing, stars exploding, and atoms colliding, yet in it is a harmony that allows us to go about our everyday lives. We are not independent of this cosmic song. Rather, we are inextricably a part of it, contributing to the attunement of the universe with each heartbeat. The ancient world recognized this universal harmony as an expression of divine intelligence, which constructed meaning in music and architecture. But with the rise of Positivism, our world view has shifted from a spiritual one of human experience to a secular one of scientific observation, resulting in disconnectedness. How do we recover an awareness of this harmony? In a world that no longer holds a common belief, there is a need to expand the definition of spirituality to be collectively understood by a modern audience. A common thread across all spiritual languages and beliefs emerges: poetic analogy.

Through poetic analogy, this thesis proposes a series of architectural spaces that address our fundamental human need for spirituality. Acting as a gallery for cosmic interconnectivity, these structures are a programmatic sequence of musical, spiritual, and cosmic spaces that unfold across three sites: Dublin, Ireland, London, United Kingdom, and Boston, Massachusetts. Grounded by the narrative of Handel's Messiah and rooted in an endless narrative of cosmic harmony, these sites function analogically, as a symphony of their own: connecting things near and far, tangible and intangible, and the self with Otherness in a poetic quest to situate humanity between the earth and the heavens.

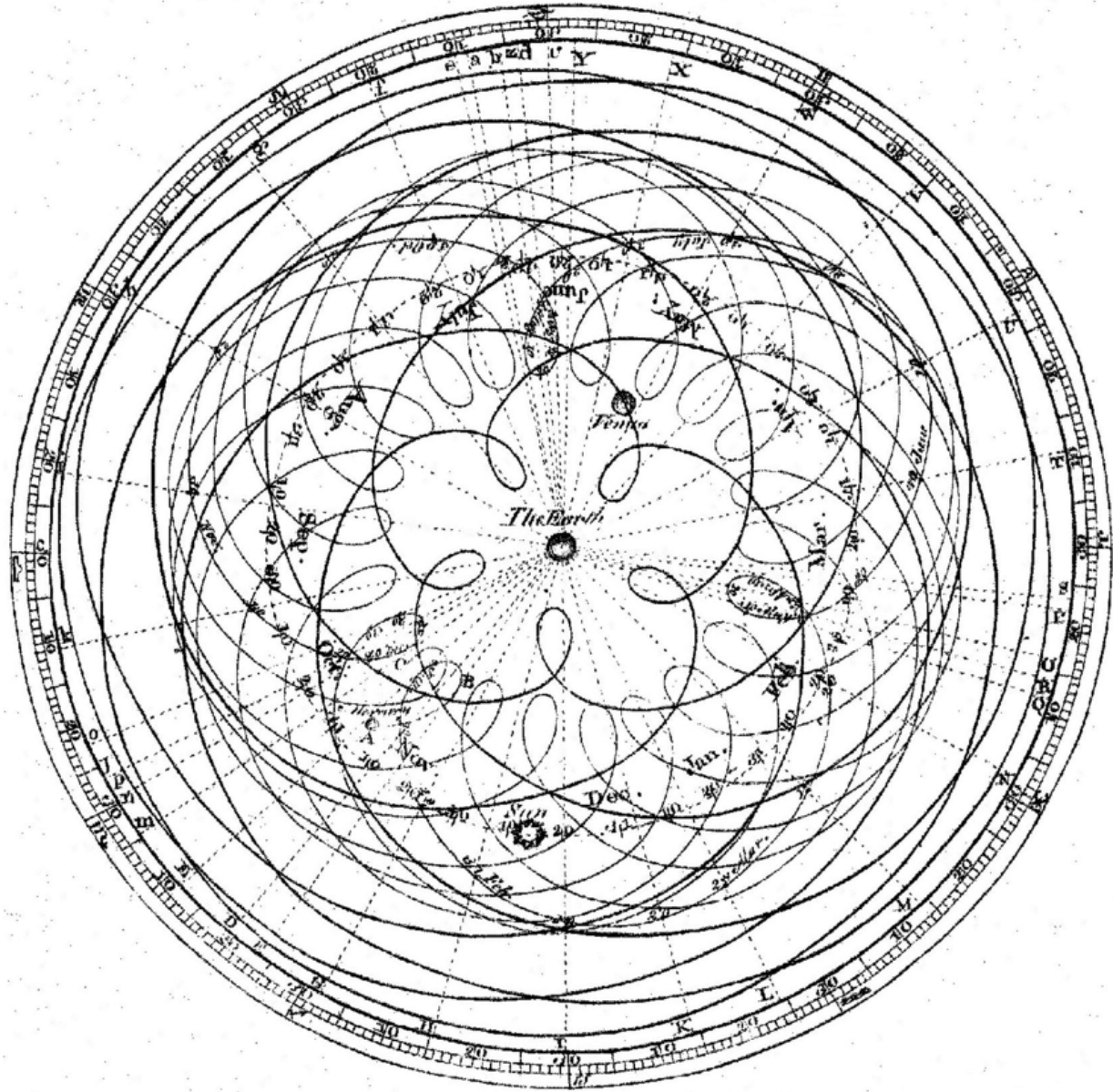


FIGURE 2: Geocentric Diagram, James Ferguson

THESIS NARRATIVE

INTERCONNECTED: HUMANITY'S SPIRITUAL ORIGINS

Before any formal scientific knowledge delivered us an understanding of the world, we knew only what we observed and experienced. A sense of wonder accompanied these observations, ones we could not understand, like how the sun appeared to move across the sky in a daily rhythm. Humanity relied on this rhythm for its routines: the rise and set of the sun marked our days, and the moon and its phases marked our seasons, choreographed with the Earth in a cosmic dance that we were in step with. This pointed to a collectively acknowledged presence of a Divine other: one who designed this inexplicably perfect cosmic order, where everything had its proper place and purpose. Central to this spiritual kind of worldview was music. The universe played a song and dance of its own, witnessed by humanity as divinely orchestrated, and it prompted us to respond in our own songs and dances called rituals and worship. Architecture was place-making for these rites, and was a cosmic construction of its own. Ancient theaters reflected the geometric essence of the sky (Perez-Gomez, 2016). Sacred buildings used domes, resembling the celestial sphere and mediating the earth with the heavens. A shared acknowledgment of the divine connected all things, creating enriched spiritual experiences in architecture and the arts.

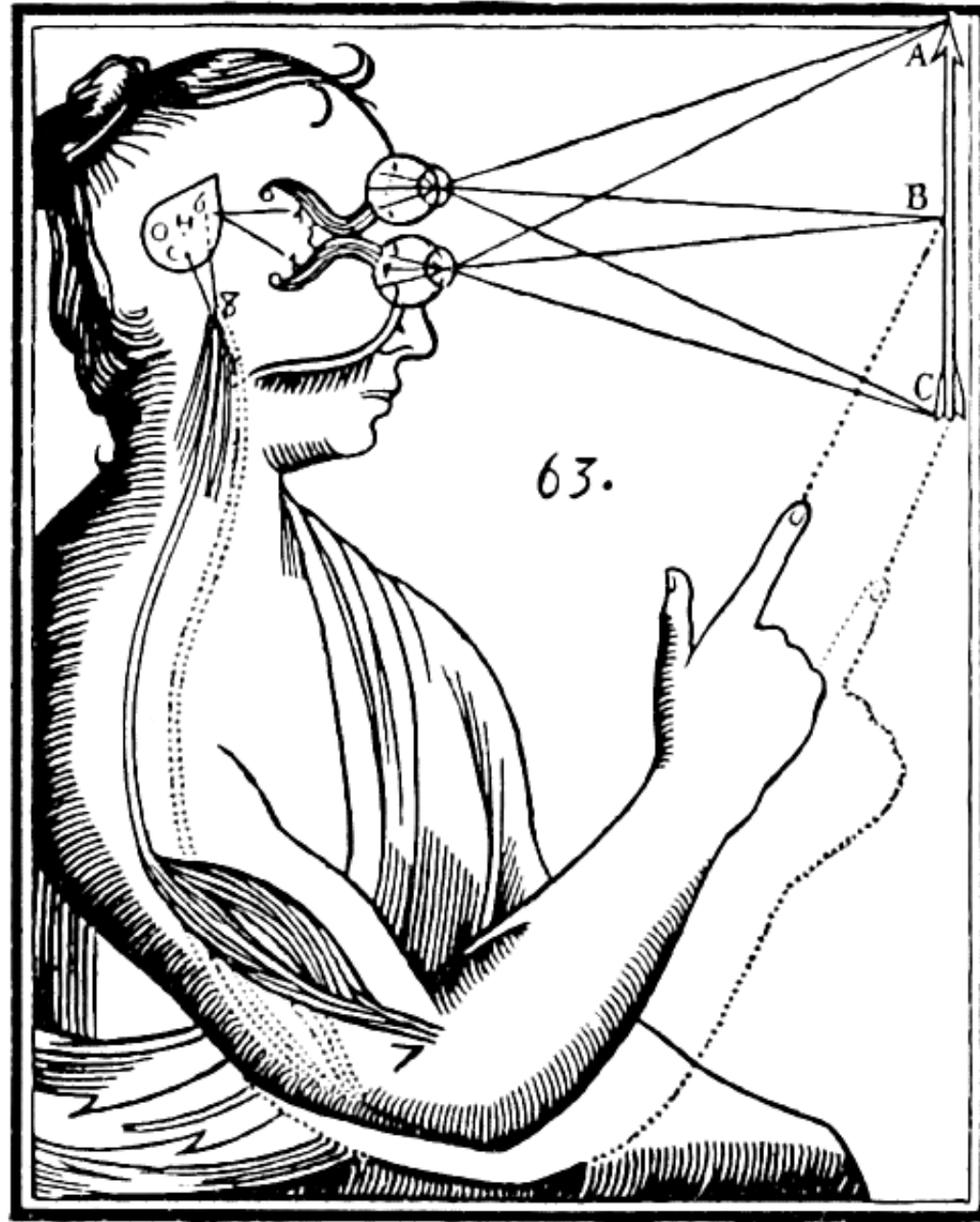


FIGURE 3: Dualism, René Descartes

DISCONNECTED: A SPIRITUAL DECLINE TOWARD SECULARISM

Through the years society has progressed in a way that has traded spiritual experiences for scientific observation. Around the 17th century, new philosophies held that meaning is not experienced, but rather arrived at through the intake of information to the brain. Followed by the rise of Positivism beginning the 19th century, which held that every rationally justifiable assertion can be scientifically verified, there became a steady separation of mind, body, and spirit, dividing subjective experiences with objective and verifiable truths of what we knew about the world, which no longer agreed upon a divine Other. Where people once relied on a higher power to explain things that they could not understand nor control, they now had information to rationalize previous mysteries, trading in divine rhythms for deductive reasoning. This rise of rationalist thought seemed parallel with a push toward secularism, which has buried spiritual experiences and dominates our world today.



FIGURE 4: Creation of Adam, Michelangelo

RECONNECTED: AN ARCHITECTURAL REDISCOVERY OF SPIRITUAL HARMONY

Although our modern world has some unrecoverable differences from its ancient origins, there is hope for a resurrection of its spirituality in the seed that still survives, and functions as an expanded definition for a secular world: poetic imagination (Paz, 1974). This hope is made present in the story of Handel's *Messiah*, a composition from George Friedrich Handel in the 1700s with spiritual themes that have translated even to a secular audience today, resonating with the modern world. It is even made present in modern physics: a new theory suggests that all matter is an interconnected network of vibrating strings, bringing the interconnectedness of the ancient world seemingly full circle. By looking at not what we objectively know, but on what we have *yet* to know, we might rediscover how incredibly connected we are to the things outside of ourselves - from someone on the other side of the globe to the very Sun that has been rising and setting this entire time, since the dawn of humanity itself. I believe this hope can be beautifully represented in architecture, with stunning potential to do so through music: a universal language with sacred origins that extends through space and time, spoken by both humanity and the cosmos.

GOALS OF THESIS

REDEFINE SPIRITUALITY FOR A SECULAR AUDIENCE

in a world where we can no longer assume everyone holds the same beliefs.

REVEAL INTERCONNECTIVITY THROUGH ARCHITECTURE

to find meaning outside of oneself.

CREATE AN ATMOSPHERE OF SPIRITUALITY

that acts as a poetic bridge between sacred and secular spaces.

EXPLORE CONNECTIONS BETWEEN HUMANITY AND THE COSMOS

and situate humanity in the space between.

PRECEDENTS

OSTRAVA CONCERT HALL

OSTRAVA, CZECH REPUBLIC. 2023
STEVEN HOLL ARCHITECTS



FIGURE 5: Ostrava Concert Hall, Steven Holl Architects

Designed as a “perfect acoustic instrument in its case”, this concert hall is situated adjacent to an existing 20th century cultural center. A distinguishing feature of Steven Holl, this building provides a dramatic contrast of new against old.

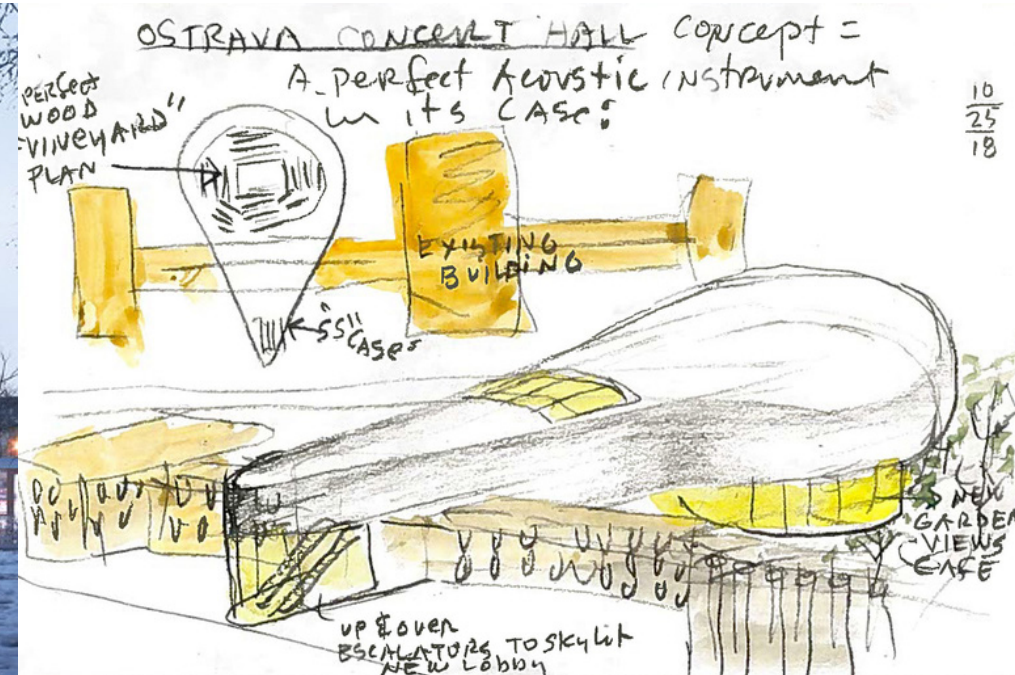


FIGURE 6a: Process sketches, Steven Holl Architects

As architecture can be guilty of replicating old architecture to imitate the spirit of the ancient world, this concert hall becomes a prime example of how a contrast can instead celebrate the spirit of the old while embracing the new. This contrast acts as a symbolic bridge between the two. Inspired by Antonin Dvorak’s symphony “From the New World”, the design has a metaphorical depth that many theaters designed simply for acoustics and utility do not.



FIGURE 6b: Ostrava Concert Hall, Steven Holl Architects

RODEN CRATER

PAINTED DESERT REGION, ARIZONA. 1979
JAMES TURRELL

This large-scale landscape artwork started as a natural cinder cone crater and has been continuously transformed into an immersive cosmic experience by Turrell since he purchased it in 1979. His goal of the work?

"My desire is to set up a situation to which I take you and let you see. It becomes your experience."



FIGURE 7: Roden Crater, James Turrell

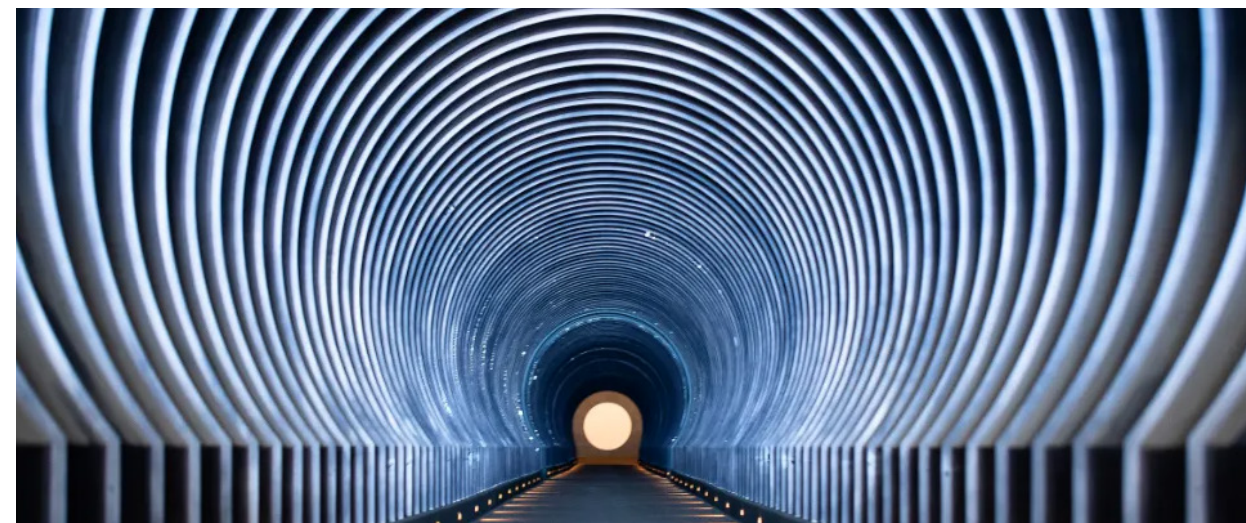


FIGURE 8a: Roden Crater Tunnel, James Turrell

Acting as a naked-eye observatory, Roden Crater includes a 1,035 foot tunnel extending underground, designed to capture specific frames and events of the cosmos. Turrell plays with light, space, alignment, and perception to engage the viewer in a fresh sense of awe and wonder, bringing the cosmos down to Earth, embedded in its surface. In another demonstration of complementary contrast, this time between the natural and the man made, and ancient wisdom of the cosmos with new technology, Roden Crater is a phenomenal precedent for resurrecting the spiritual nature of the ancient world and its alignment with the cosmos.

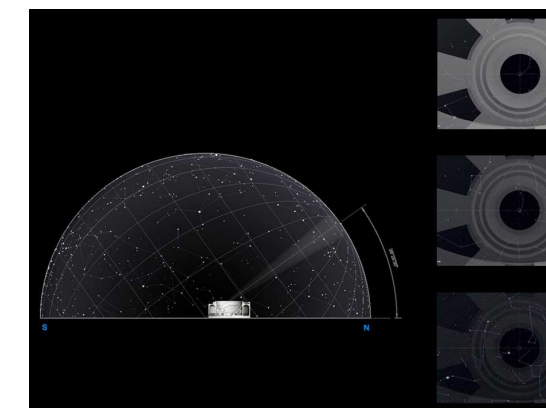


FIGURE 8c: Roden Crater Moon Diagram

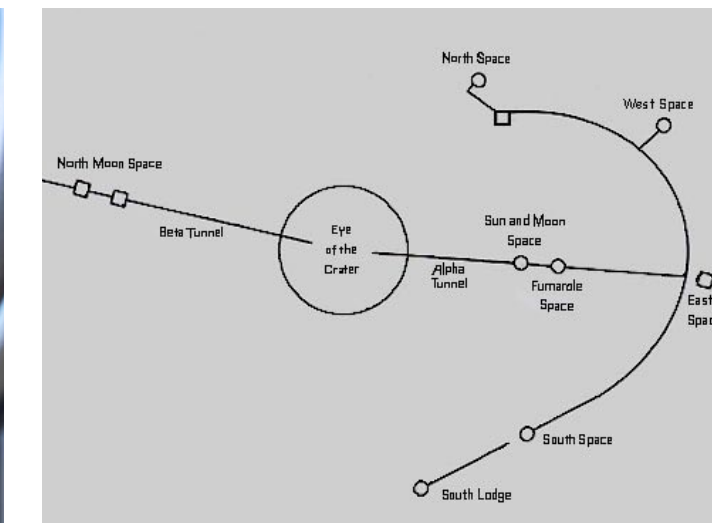


FIGURE 8b: Roden Crater Schematic Plan

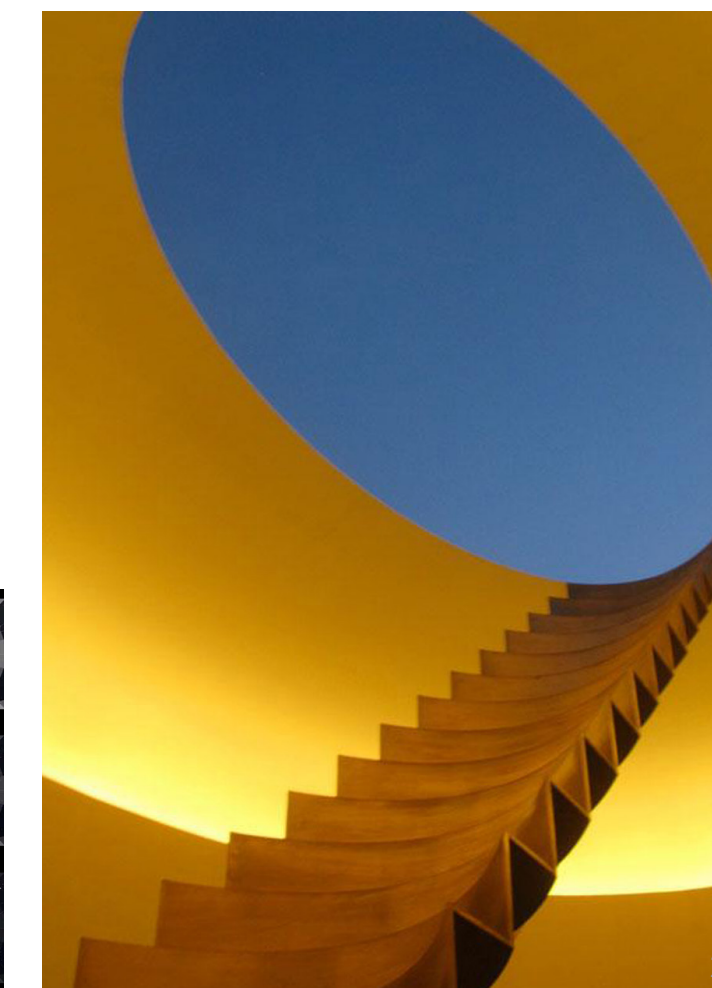


FIGURE 8d: Roden Crater, photo by Ed Krupp

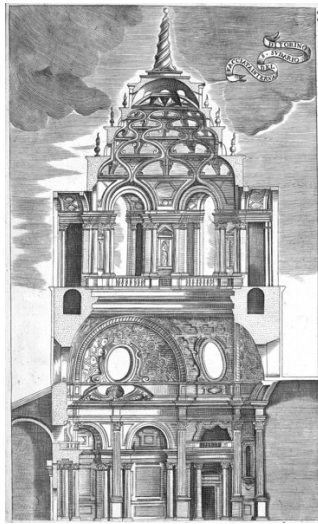


FIGURE 9: Chapel of the Holy Shroud Section, Guarino Guarini

CHAPEL OF THE HOLY SHROUD

TURIN, ITALY. 1694
GUARINO GUARINI

This Baroque style church was built to hold the Shroud of Turin, a sacred relic believed to be the burial shroud of Jesus Christ, holding the imprint of his dead body prior to Resurrection. In his book *Attunement*, Perez-Gomez describes its atmosphere of beauty, seriousness, and desire - a space of desire for God while remembering Christ's crucifixion (Perez-Gomez, 2016).



FIGURE 10a: The Shroud of Turin

This chapel is an illustration of architecture's ability to bring back something lost. Its delicate materiality "woven with stone and light" makes present the absent body of Christ, like the relic it contains. The chapel creates "a mysterious penumbra that becomes brighter towards its summit, yet never too bright" (Perez-Gomez, 2016). Like the relic, the chapel, and a shadow, architecture too demonstrates its ability to make present something that is missing.

FIGURE 10b: Chapel of the Holy Shroud, Smithsonian Magazine

PROJECT EMPHASIS

In my investigation and design process, I hope to emphasize the following to restore the human need for spirituality:

THE DECLINE OF SPIRITUALITY WITH THE RISE OF POSITIVISM

By understanding where society lost our sense of spirituality, we have better hope to recover it.

THE SACRED ORIGINS OF MUSIC, ARCHITECTURE, AND THE ARTS

A critical part of understanding who we are is where we came from, and all of these origins converge back to an acknowledgment of a divine Other. This beginning is what brought us where we are today, regardless of the differences we see: it is essential to humanity's identity and is well worth reconnecting with.

SPIRITUALITY AS POETIC IMAGINATION

Although a modern world no longer agrees on the presence of a divine Other, believing in its existence seems to have become our definition of spirituality, resulting in division and therefore disconnect. By expanding the definition of spirituality to poetic imagination, it can unify society with an ability to realize our cosmic connection.

MAJOR PROJECT ELEMENTS

JOURNEY

The unfolding of an experience, illuminating a path of discovery. A journey can be intimate; guided by touch, yet distant; connected to things far.

FRAGMENT

As a disconnected piece of something, the very essence of fragment recognizes a larger whole. Utilizing this concept, there is an opportunity to make present something that is absent, arousing an ability to join with things unseen.

SOUND

A series of vibrations, sound has a way of connecting us all, as all matter has a frequency it vibrates at. Tuning into these sounds awakens an awareness of a greater cosmic symphony.

LIGHT

Light is something both seen and felt, a sensory experience that displays our ability to recognize something intangible. Light defines our rhythms and guides our path, and is made present even in its absence - in the form of its shadow.

LITERATURE REVIEW

ATTUNEMENT: ARCHITECTURAL MEANING AFTER THE CRISIS OF MODERN SCIENCE

ALBERTO PEREZ-GOMEZ

An architectural historian, theorist, and educator, Alberto Perez-Gomez has published numerous articles and books on architecture and its relationship between a variety of subject. In *Attunement*, he focuses on the deeply intertwined relationship between architecture and music in the premodern era. With an interest in atmospheres, he investigates precedents that channel sensory elements to create emotional and spiritual experiences. He goes onto show further relationships between these musical atmospheres and the human mind, body, and spirit, saying that “the musical analogy that is set forth in relation to architecture does concern beauty, the experience of harmony, but its crucial dimension is a deeply felt psychosomatic health.” He contends that a harmonious relationship between music and architecture creates an atmosphere of health between mind and body, integrated with this harmony. Not only that, but it opens a “bittersweet space of desire that characterizes the human condition”, addressing the human need for spiritual experiences.

ATTUNEMENT
ARCHITECTURAL MEANING
AFTER THE CRISIS
OF MODERN SCIENCE
ALBERTO PÉREZ-GÓMEZ



ATTUNEMENT (CONT.)

Parallel with an examination of premodern architecture, he critiques the development of premodern philosophies and its effects on musical atmospheres. Beginning with Plato’s harmony of the spheres, Perez-Gomez studies the evolution of ideas to where this interconnectivity in music and architecture got lost, as philosophies like Descartes’s dualism became accepted. Despite this idea that the mind and body were separate entities, Perez-Gomez emphasizes that still “the belief in the harmonic and musical order of the Christian creation was not questioned; on the contrary, it became dogmatic, fueling the desire to put forward scientific hypotheses in order to better grasp the invisible order of the cosmos as God had created it, in ways that might not be readily available to our senses.”

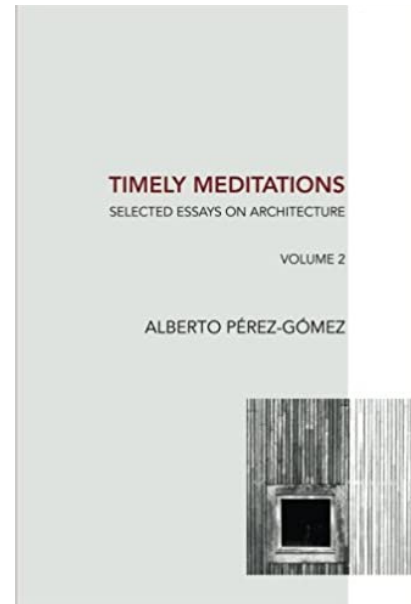
Amidst discordant beliefs and conflicting phenomena, a harmony still prevails, which he demonstrates in an examination of musical language: the word *concertare*, from a Latin word that means “to fight” and “to emulate”, denoting “harmony within strife”. This is the ability to perceive harmony even among discordance, to which he says “*con-certare* implies the idea of world harmony to which one must strive to adjust oneself; music and architecture are privileged means to this end.”

TIMELY MEDITATIONS: ARCHITECTURE AS A PERFORMING ART

ALBERTO PEREZ-GOMEZ

Chapter 5 of Perez-Gomez's *Timely Meditations* is an essay on Architecture as a Performing Art. This analogical examination of architecture holds that architecture is not just a visual experience, but one that engages all senses of the human body, an "interweaving of lived time and space", prompting cathartic experiences and bringing a sense of wholeness. Perez-Gomez names some examples of such architecture, highlighting the importance of light and shadow in crafting this catharsis. He goes on to discuss the participation of architecture as a performing art. He discusses the idea of "performing" architects, whose "good practice emerges from a constant development of skills and study, seeking understanding of crucial cultural discipline and may be germane to any projects and hand, drawing from history (for stories), and new perceptions emerging from heightened skills, always asking the questions anew when confronting a new project, rather than repeating a formulaic "style"." By doing this, he says that architects can "truly contribute to society... particularly crucial to open up the possibilities for dwelling in a technological world."

In light of this, a philosophical approach to architecture must be considered crucial - an orientation "buttressed by a knowledge of the history of the discipline that demonstrates, through example, the manner other architectures have managed to respond to the fundamental questions of being human in different times and places."

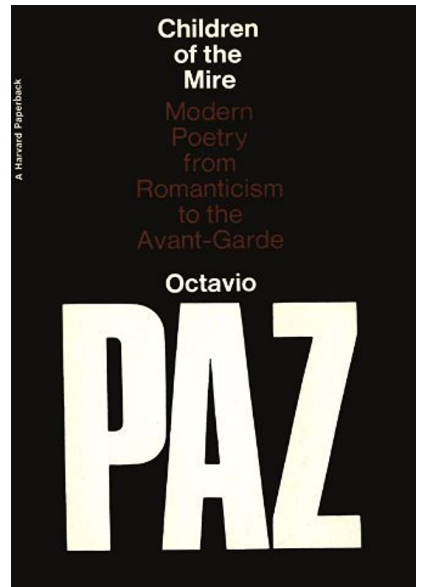


CHILDREN OF THE MIRE

OCTAVIO PAZ

With a goal of expanding the definition of spirituality in order to be more collectively understood in a modern world, philosopher Octavio Paz is a great resource to do so. He acknowledges the modern society's critical and antagonistic nature: in simple terms, this nature prevents us from collective agreement. Yet he argues that still there is some common ground, one that even stands today, and that is the poetic principle. He calls poetry "the original language of society, before all religious revelations." Not only does it predate formal religion, but it has outlived ones such as paganism, and he speculates that it will probably outlive others too. Whether its rejection of religion or love for religion, he says that "each poet invents his own mythology, and each mythology is a mixture of different beliefs, rediscovered myths, and personal obsessions...", its ambiguous nature being something that a society of divided beliefs can find resolve in.

He traces the history of this poetic principle, painting a clear picture of its spiritual nature. In the Middle Ages, it was the "hand maiden of religion, in the Romantic era it was the true religion, the fountainhead of the Holy Scriptures." He observes that poetic imagination was there from the start, from magic to myth and litanies to prayers. It showed "the other side, the wonders of everyday life", and then religion transforms these "works of imagination into beliefs, and beliefs into systems." The poetic principle always came first; it animates spirituality.

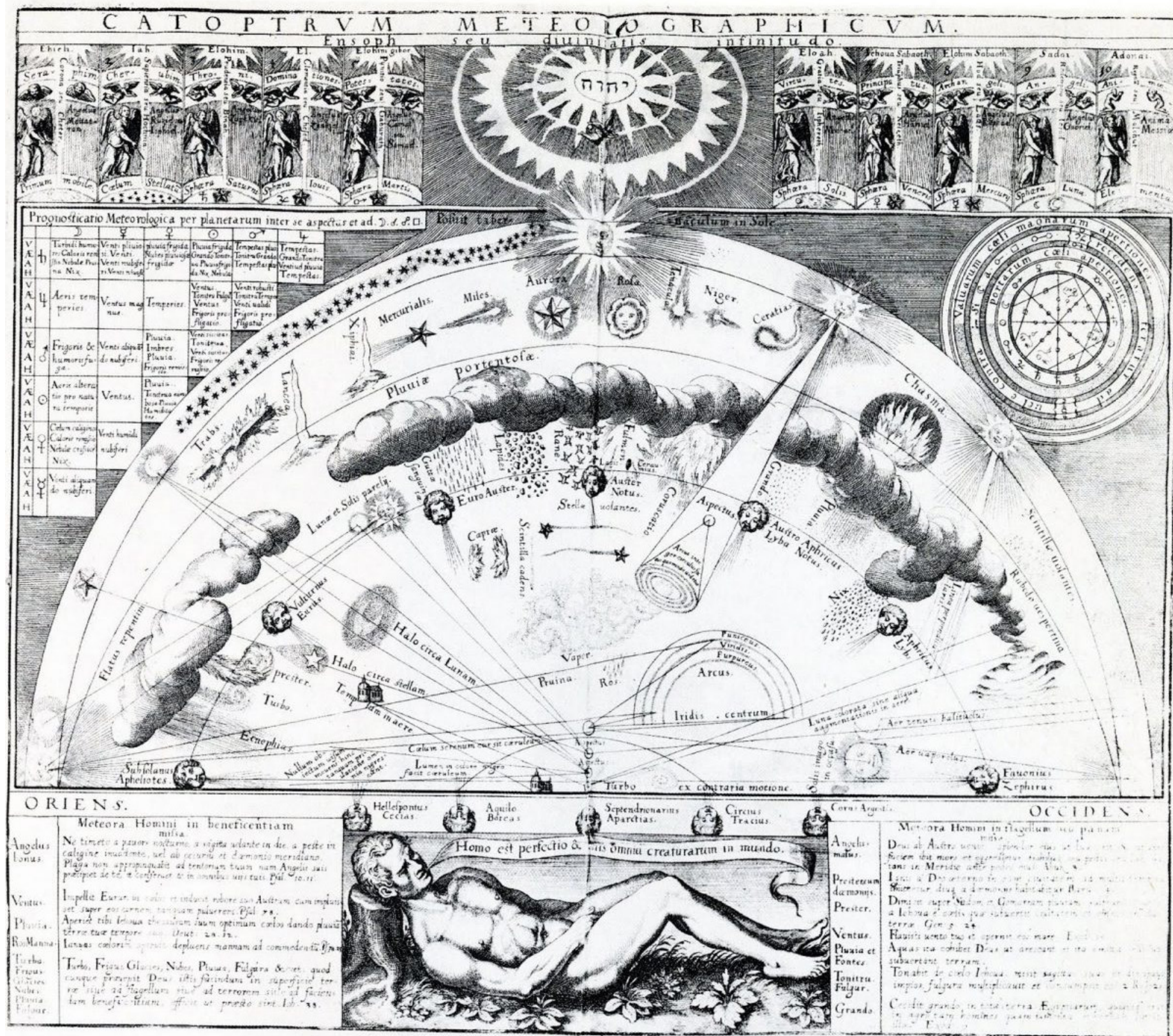


CHILDREN OF THE MIRE (CONT.)

Even with the crisis of modern science, Paz stresses that “imagination is the condition of knowledge: with it there could be no link between perception and judgment”. Inextricably tied to religion, the “poetic word is the founding word”. In diverse systems of religion, poetry, and beliefs, Paz discerns a common belief of analogy. Analogy, which coincides with poetry itself, is the “principle before all principles”.

Paz goes on to discuss the nature of a poem as it relates to the universe, which turns the universe into a poem through analogy. He calls poetry both knowledge and action; “in both it borders on philosophy and religion, but only to contradict them.” While philosophy and religion are made up of reasons, poetry is made up of rhythms, allowing for a more ambiguous translation with still a depth of meaning. And though religions can perish in history, Paz says “in all of them a nonreligious seed survives: poetic imagination.”

HISTORICAL & THEORETICAL CONTEXT



HUMANITY'S ORIGINS

There is a perfect cosmic harmony, an orderly orbit of dancing spheres, providing a steady stream of miracles that gives us another breath. Humanity used to rely on this harmony for its rhythms and routines. The rise and set of the sun marked our days, and the moon and its phases marked our seasons, choreographed with the Earth in a cosmic dance that we were in step with. A sense of wonder came with what we observed and experienced yet could not understand, like how the sun appeared to move across the sky in a daily rhythm. This pointed to a collectively acknowledged presence of a Divine other who designed this perfect cosmic order, where everything had its proper place and purpose.

FIGURE 12: Catoptrum Meteorographicum, Robert Fludd

Central to this spiritual kind of worldview was music.

Plato described the universe as being a musical entity of its own, called the Harmony of the Spheres: as the celestial bodies danced in perfect circles through the heavens, they hummed a song of their own, one our human souls were attuned to that expressed divine intelligence. Our music became a response to this harmony as hymns and worship, which Michael Spitzer calls *"a response to sounds and thoughts to divine grace, humanity contributing pious songs to nature's singing waves, both of them sacred"*.

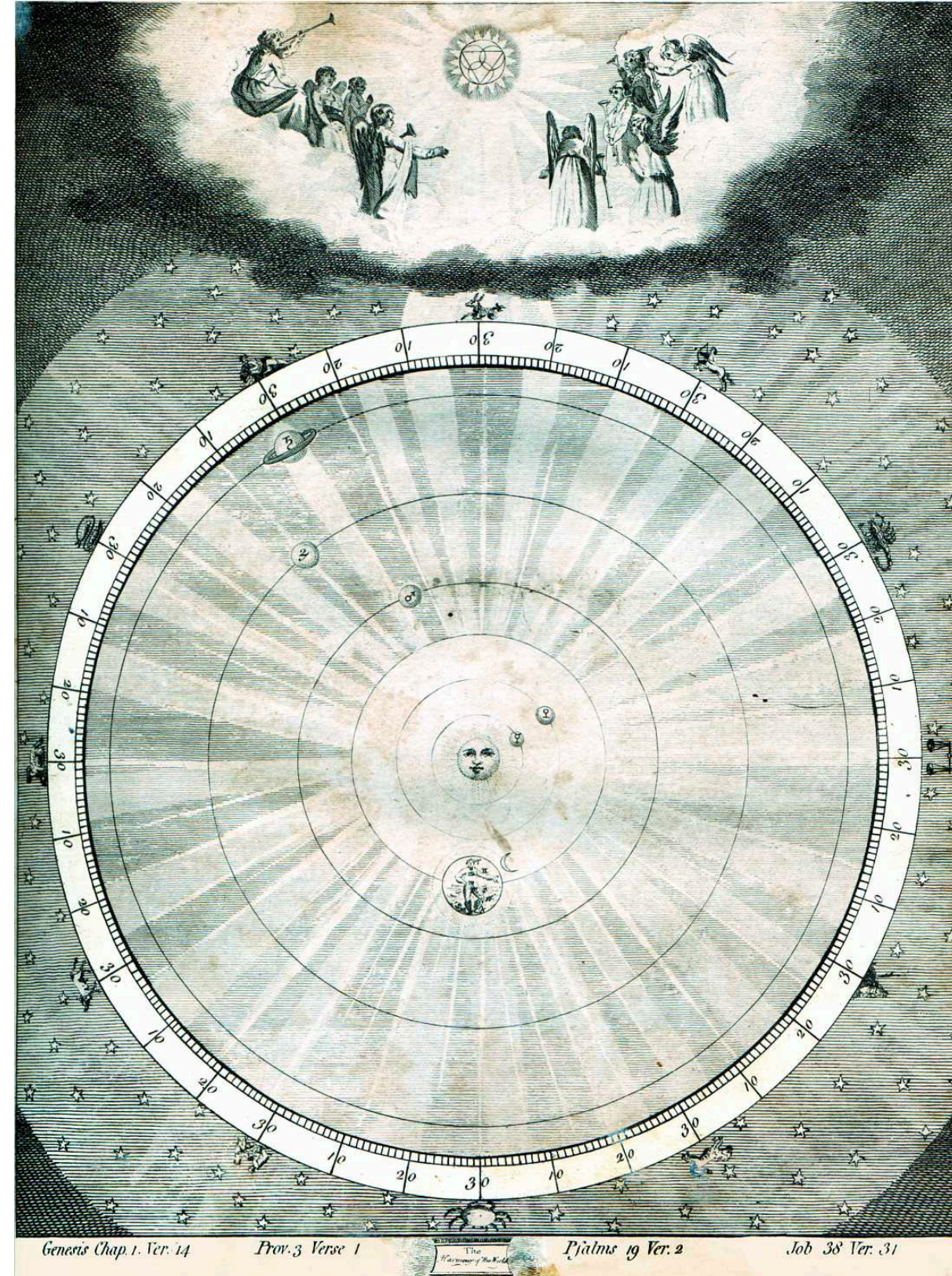


FIGURE 13: Harmony of the World, Ebenezer Sibly

ARCHITECTURE: A PART OF THE HARMONY

The star dance was reflected in Christianity as the dance of angels, which introduced ritual dances in the church. Sacred rites became songs, dances, and plays, and architecture was place making for these rites, as an active space. Even theater design was influenced by the cosmos, reflecting the geometric essence of the sky (Perez-Gomez, 2016). Sacred buildings used domes, resembling the celestial sphere and representing the heavens in its perfect circle, symbolically connecting the human realm with the divine.

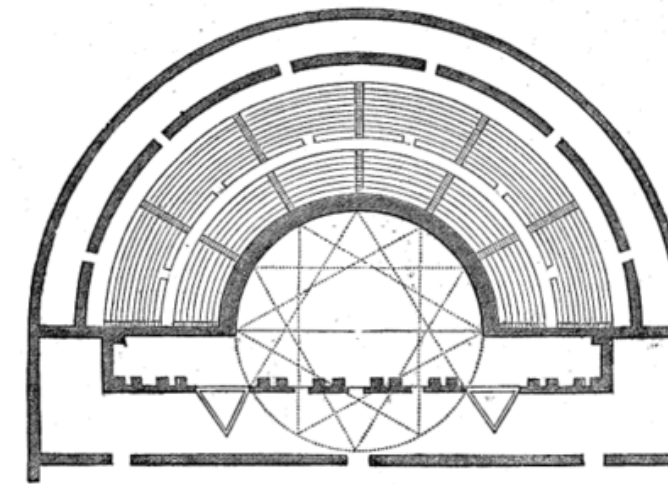


FIGURE 14a: Plan Romeins theater, Unknown

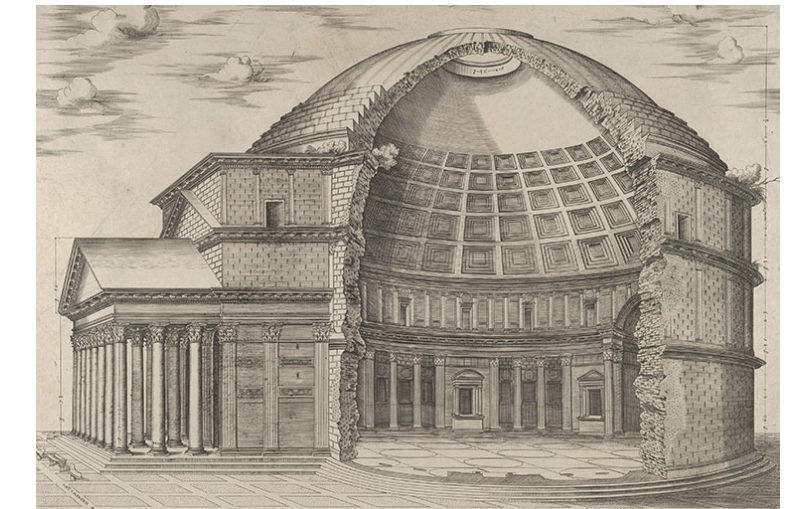
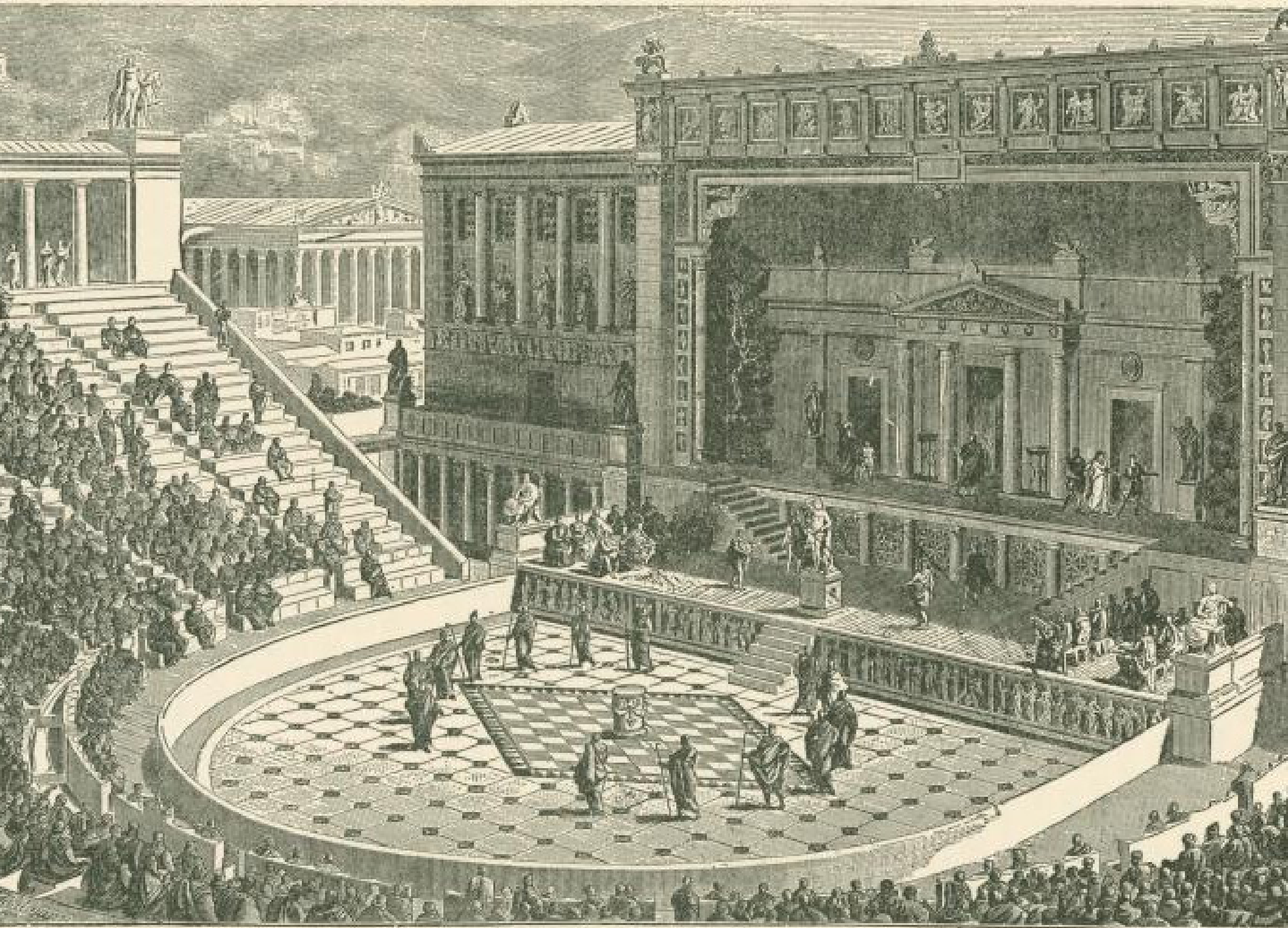


FIGURE 14b: Pantheon, Metropolitan Museum of Art



THEATRE OF DIONYSIUS RESTORED, EPHESUS.

FIGURE 15: Theater of Dionysus Restored, Ephesus

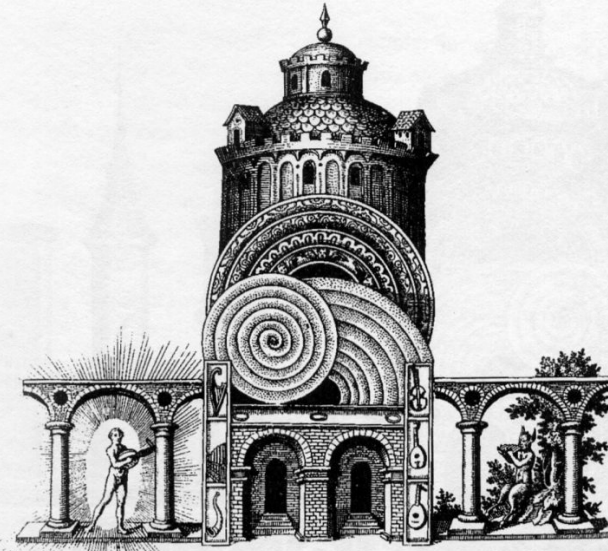
In his book *Timely Meditations*, Albert Perez-Gomez draws the analogy of architecture as a performing art, calling it a “*lived spatiality... an interweaving of lived time and space, together with its bearing on significant experience and the construction of meanings, [which] tends to be ignored by conceptual and objectifying design practices*” (Perez-Gomez, 2019). The rich meaning that came from infinite connections in a recognized cosmic harmony has been lost in a modern world, and with it, lost in our music and architecture. Yet this history is proof that it can be found again, resurrected for a secular world.



FIGURE 16: Unknown, Vitruvius

THE FUNDAMENTAL ROLE OF MUSIC

In his book *Attunement*, Perez-Gomez elaborates: “Underlying European spiritual history, which culminates in our world as technological civilization, is an appreciation for the fundamental role of music as a carrier of intellectual and emotional knowledge. We ultimately owe this heritage to the centrality of music in Greek thought...” (Perez-Gomez, 2016). Music becomes a critical link between ancient and modern world view, its harmony resonating with the cosmic harmony that Perez-Gomez defines as *concertare*, a Latin word meaning “*harmony within strife*” : one that was experienced in ancient Greece and translates as knowledge and culture today. (Perez-Gomez, 2016).



3.7 La torre redonda

FIGURE 17: Temple of Music, Robert Fludd

CONCERTARE:
HARMONY WITHIN
STRIFE

THE BEGINNING OF DISCONNECT

Regardless, we still see a disconnect – a loss of spirituality has diluted our experiences and reduced it to rationalism. While ancient Greek thought observed a harmony between the heavens and the earth and the body and the soul, new philosophies around the 17th century – like Cartesianism – held that the soul and body were fundamentally at odds, as meaning is not experienced, but rather arrived at through the intake of information to the brain. New philosophies and knowledge overtime continued to segregate mind, body, and spirit, dividing subjective experiences with objective and verifiable truths of what we knew about the world, which no longer agreed upon a divine Other. Divine rhythms were substituted for deductive reasoning, and poetic storytelling for direct translation.

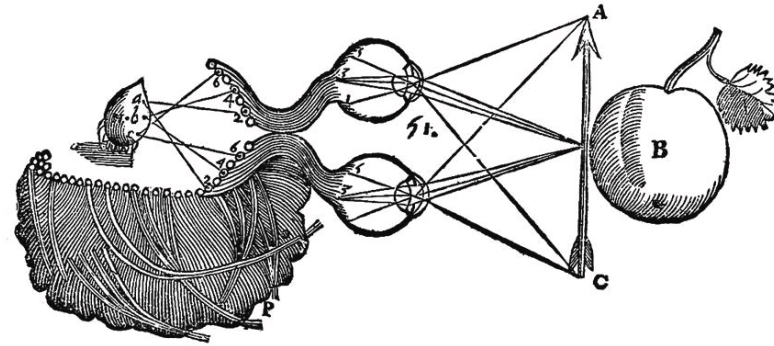


FIGURE 18: Illustration from *La dioptrique*, René Descartes

REDEFINING SPIRITUALITY

With this shift toward secularism, we can no longer assume everyone holds the same beliefs. Yet spirituality remains a fundamental human need: it cannot be discarded, but rather more broadly defined for a modern audience to be collectively understood. Because spirituality is so entangled with the origins of music, architecture, and humanity itself, it is essential to investigate and consider.

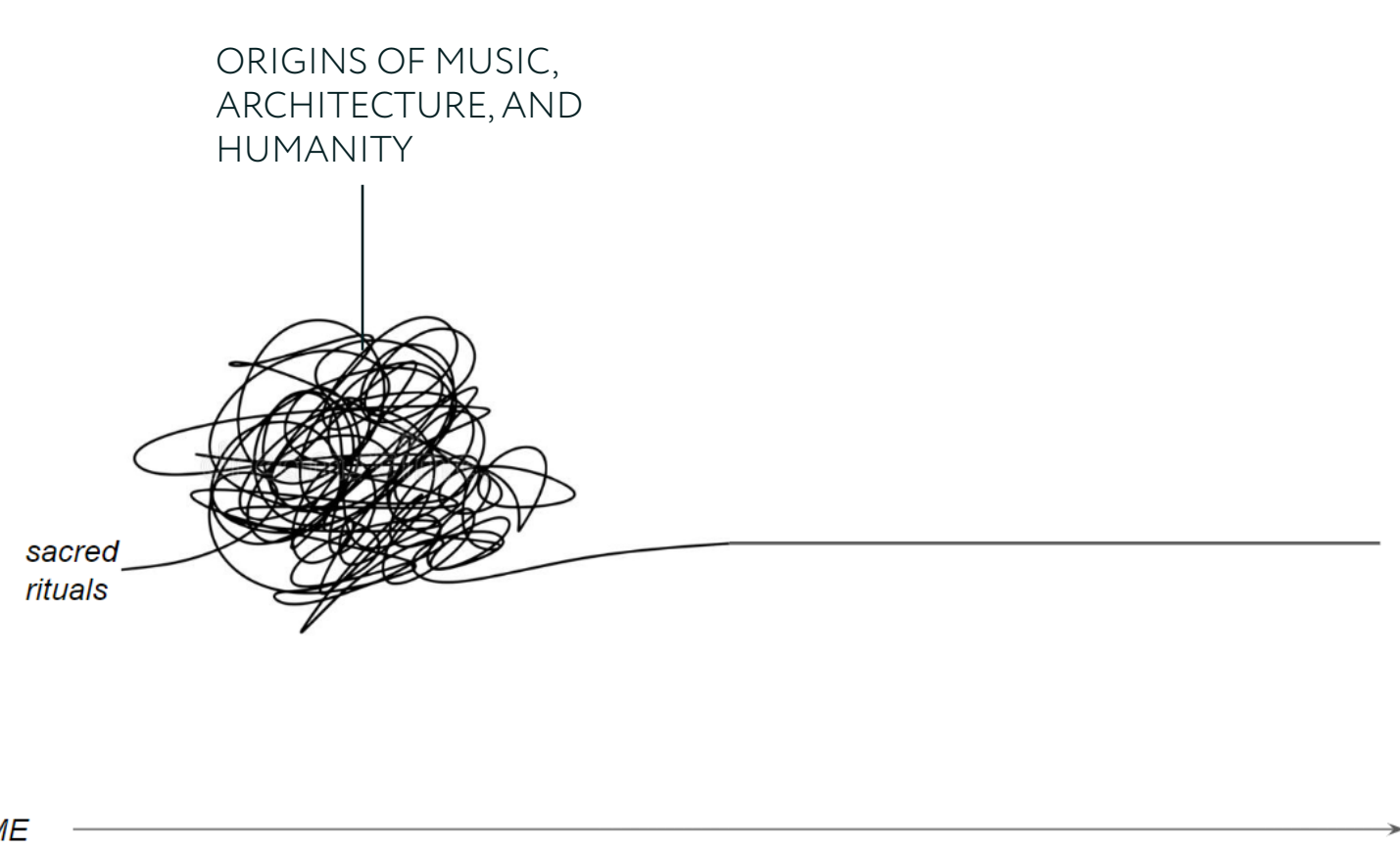


FIGURE 19: Sacred Ritual Origins

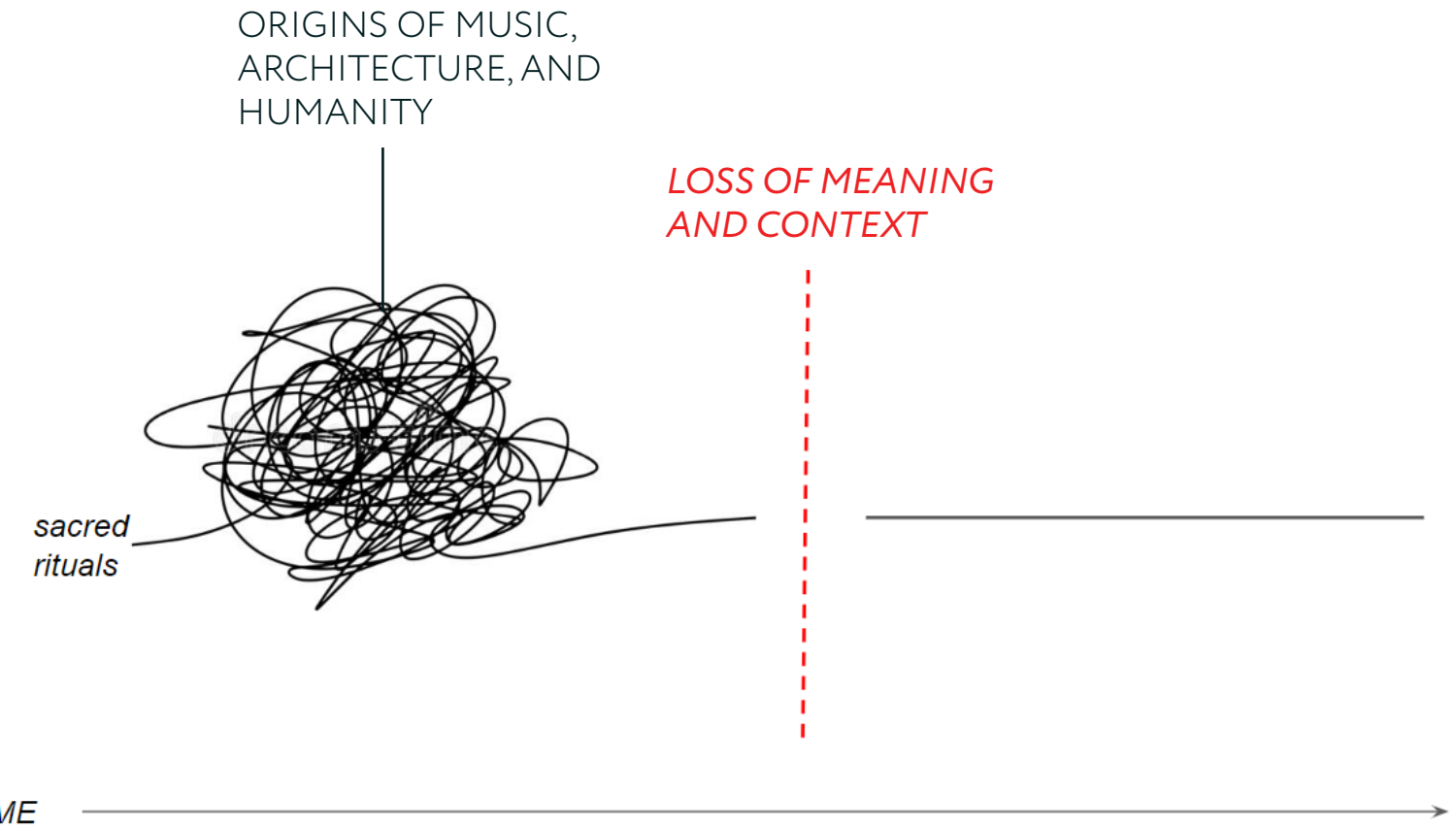
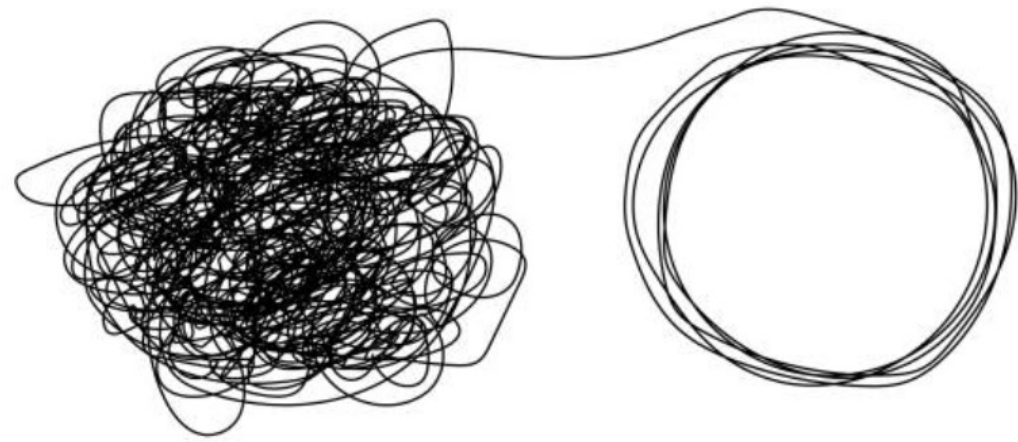


FIGURE 20: Severed Sacred Origins

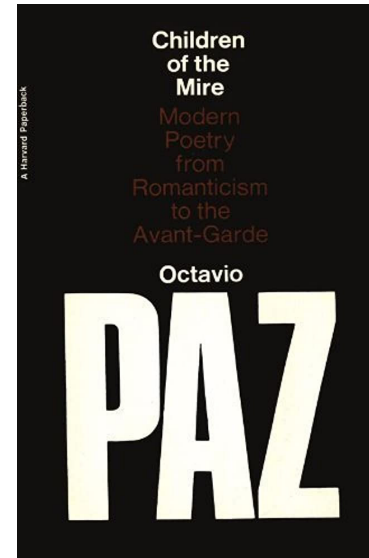
To ignore it is to cut the string of its origins at this entanglement, resulting in a loss of culture, history, and constructs of meaning.



TIME →

FIGURE 21: Rewoven Origins

Instead, through carefully combing through the snarls, we can unravel and therefore restore this spiritual meaning back into our world, resurrecting what once was.



So how do we more broadly redefine it? Octavio Paz, author of *Children of the Mire*, has an answer:

POETIC IMAGINATION.

Paz addresses how poetic analogy is the common thread of all spiritual languages and experiences across all times. Discussing analogy, he says “the belief in correspondences between all beings and worlds predates Christianity, crosses the Middle Ages, and through Neoplatonism, illuminism, and occultism, reaches the 19th century...” he goes onto say that analogy outlives paganism and will probably outlive other religions too. Analogy was the “principle before all principles, before the reason of philosophies and the revelation of religions, and this principle coincided with poetry itself”, making it the perfect common ground for our secular world to stand on and begin to build off of.

A POETIC FULL CIRCLE

Though spirituality may not look the same today as it did in the ancient world, it can still bring us full circle to the cosmic harmony once recognized, like a universal poem, which Paz calls “a spiral sequence which turns ceaselessly without ever returning completely to its beginning”. It is both knowledge and action, bordering philosophy and religion, yet contradicting them as it is “made not of reasons but of rhythms”. Using poetic analogy as a spiritual framework, the secular world can start to view scientific reason and objective truths not as reason against spirituality, but as rhythms within a cosmic poem. Time goes on, society progresses, and though religions can perish in history, still Paz says that “in all of them a nonreligious seed survives: poetic imagination.” It is this seed that allows us to draw connections between seemingly disconnected things, tuning into the cosmic harmony that used to construct meaning within our world.



FIGURE 22: Seed of Poetic Imagination



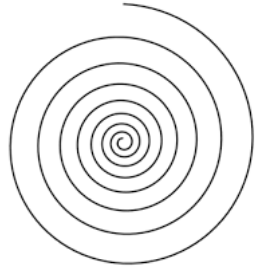
FIGURE 23: Robert Fludd



FIGURE 24: Athanasius Kircher

EUROPEAN POLYMATHS: EXPLORING INTERCONNECTIONS

Polymaths of the 17th century, such as Robert Fludd and Athanasius Kircher, studied these infinite connections between a diverse variety of disciplines. Both recognized correspondences between the human microcosm and universal macrocosm, studying its representation in music specifically. In his treatise *Musurgia Universalis*, Kircher discusses in depth the harmonies and ratios of music as a reflection of proportions of the universe and its planetary movement, a symphony that could be heard by the soul. He says “the harmony of lower objects is nothing less than an echo or repercussion.”

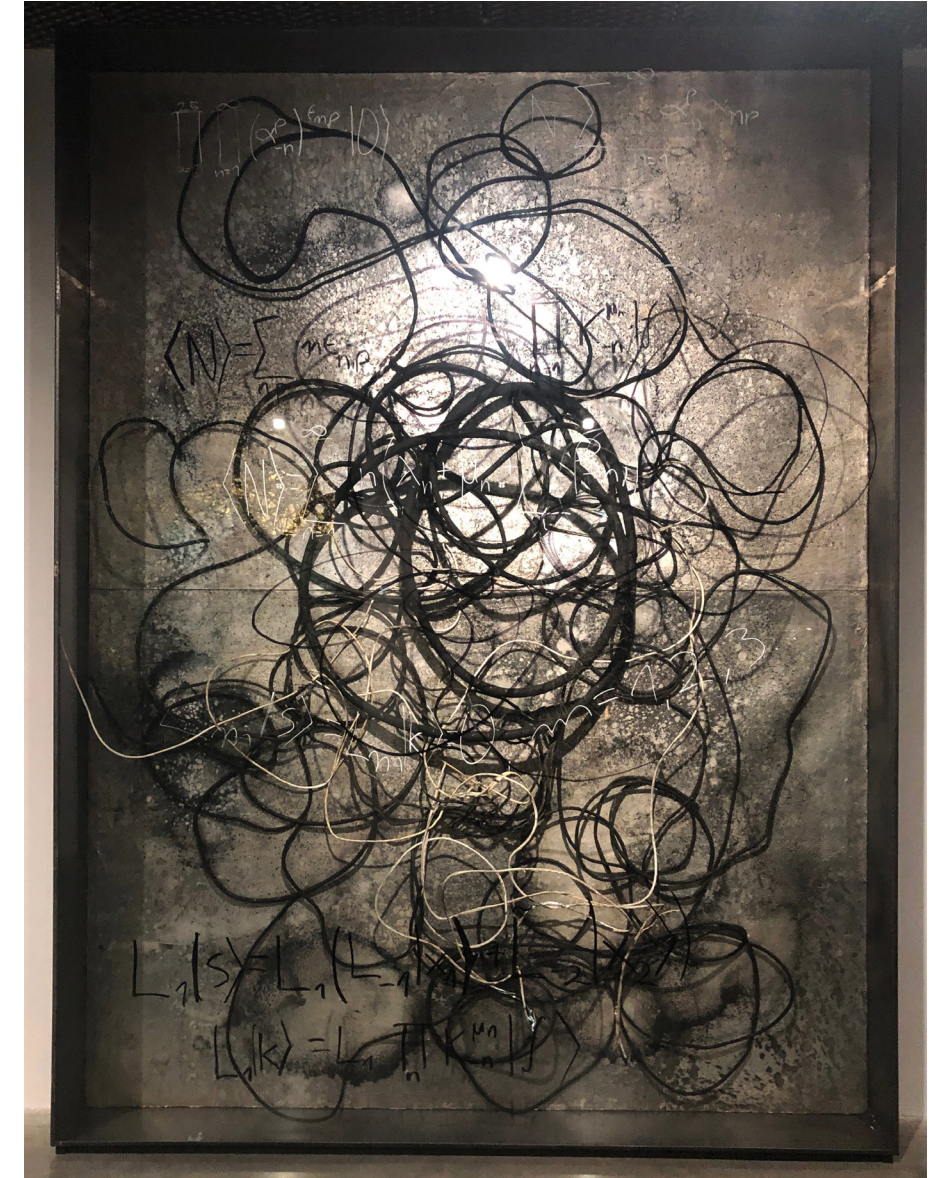


MODERN SCIENCE: A RETURN TO INTERCONNECTIVITY?

Though modern science may seem to contradict these 17th century theories, they have actually heavily influenced them; science and spirituality might still appear to be competing ideas, but a closer look reveals the depth of their accord. A panel conversation including German artist Anselm Kiefer, poet and novelist Ben Okri, and astrophysicist Priya Natarajan discussing Kiefer's latest exhibit is a prime example of this accord. Kiefer's exhibit Superstrings explores the connections between art, science, and mythology using themes from string theory: a theory of modern physics proposing that all matter is a complex, interconnected network of vibrating strings. Like Paz's analogy of a poetic spiral, this theory brings us seemingly full circle to the universal attunement we once recognized.



FIGURE 27a: Superstrings, Anselm Kiefer



Similar to piano strings vibrating at different frequencies allowing us to hear different notes, string theory proposes that matter acts the same, its molecular vibration determining its makeup, and inherently linking it to all other matter. Though there is still much to discover, new knowledge lies beyond what we know, into that which we have yet to fully understand. Natarajan stresses the importance of this, affirming that to have new discoveries she has to “do something that surprises [her]”, a philosophy of both an astrophysicist and an artist.

MODERN ART: INTERCONNECTIONS REPRESENTED

ANSELM KIEFER

Kiefer's *Sol Invictus* acts as another “string” and is a nod to Robert Fludd, who believed that each plant had its own corresponding star in the firmament: the natural world mirrored in the spiritual. In this work, Kiefer used sunflowers as a representation of Fludd's analogy and an emblem of interconnectivity. The sunflower follows the course of the sun, representing the daily influence of the heavens on the earth. As it dies, it points its face toward the earth, scattering its seeds: a twofold representation of what Hatje Cantz calls “the free movement of cosmic flux and the possibility of regeneration” (Cantz, 2001).

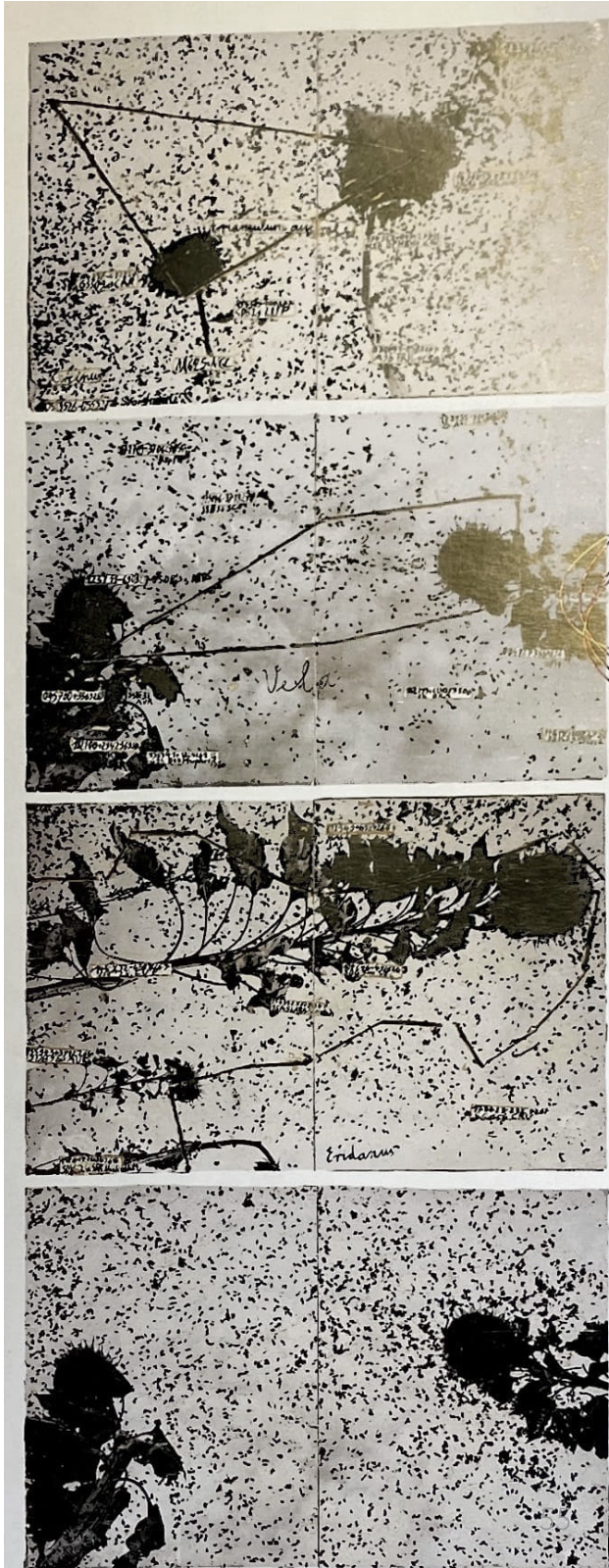


FIGURE 28: *Sol Invictus*, Anselm Kiefer



The work consists of 20 sunflowers, crushed and emulsified between pages of a book, each corresponding to a star in the sky, mediating the heavens and the earth.

FIGURE 29: Sol Invictus, Anselm Kiefer

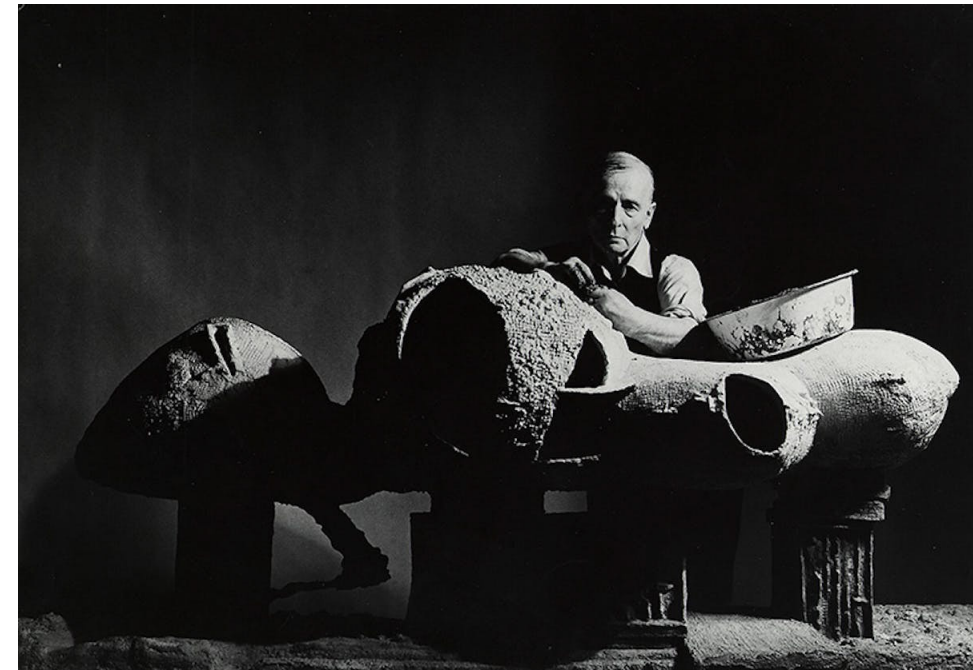


FIGURE 30: Endless House, Frederick Kiesler

FREDERICK KIESLER

An Austrian-American architect, artist, and theorist, Kiesler sought to do something similar: as a proponent of Correalism, he recognized dynamic correlations between objects, environments, and human experiences. Kiesler believed these relationships were what Dieter Bogner calls “part of an ongoing spiritual process that lent meaning to existence” (Bogner, 2001). From this belief, he produced Endless House, a work that Bogner compared “the infinite nature of the celestial sphere and the concept of the Endless house as a cosmos shaped by men” (Bogner, 2001).

The form embodied endlessness through elastic spatiality, where light could reach every part of each space without being broken up by corners and walls. He says:

"All ends meet in the "Endless" as they meet in life. Life's rhythms are cyclical. All ends of living meet during twenty-four hours, during a week, a lifetime. They touch one another with the kiss of time. They shake hands, stay, say goodbye, return through the same or other doors, come and go through multi-links, secretive or obvious, or through the whims of memory."



FIGURE 31a: Endless House, Frederick Kiesler



FIGURE 31b: Endless House, Frederick Kiesler



FIGURE 31c: Endless House, Frederick Kiesler



FIGURE 32: David, Frederick Kiesler

Kiesler saw art and architecture as single stars as parts of a galaxy – not as isolated entities, but as parts of a complex system of interrelationships.

THESIS ARTEFACT



FIGURE 33: Thesis Artefact

Through investigating this history of cosmic harmony, I attempted to create a galaxy of my own. In an effort to bring the cosmos down to Earth, these three sound machines resonate the frequencies of celestial bodies, its vibrations causing movement of the sand, water, and color resting on an attached metal plate.



FIGURE 34: Thesis Artefact

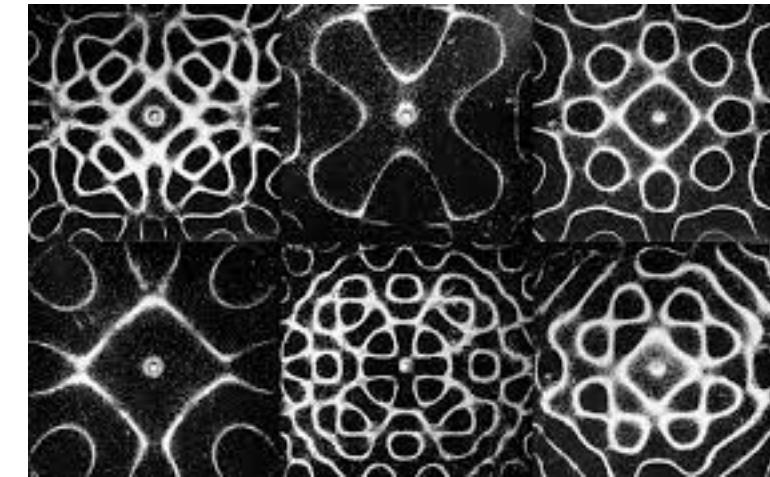


FIGURE 35: Chladni Patterns

Inspired by Chladni patterns, which are geometric patterns that form on surfaces vibrating at specific frequencies, I became curious of what kinds of patterns these cosmic frequencies might cause.



FIGURE 35a: Thesis Artefact



FIGURE 35b: Thesis Artefact



FIGURE 35c: Thesis Artefact

The process of creating this was, as I stated earlier, by “doing something that surprised me” in hopes of discovery. Both in my artifact and in this kind of discovery met by surprise, I found a hope for resurrecting spirituality. Following its expanded definition for a secular audience, it acts as a poetic analogy of cosmic interconnectivity – one with stunning potential to be translated by music and architecture, mediating the space between the earth and the heavens as a rhythm and reflection of the cosmos.



FIGURE 35d: Artefact Video

In experimenting, the sand began to take on a dance that strayed from rigid patterns, yet in perfect harmony with the pulsating frequencies of the Sun and Earth. Adding water and paint, this motion became even more dramatized. This etheric movement echoes the star dance and draws us into its rhythm, acting as a kaleidoscopic lens through which we can identify endless connections within the universe.

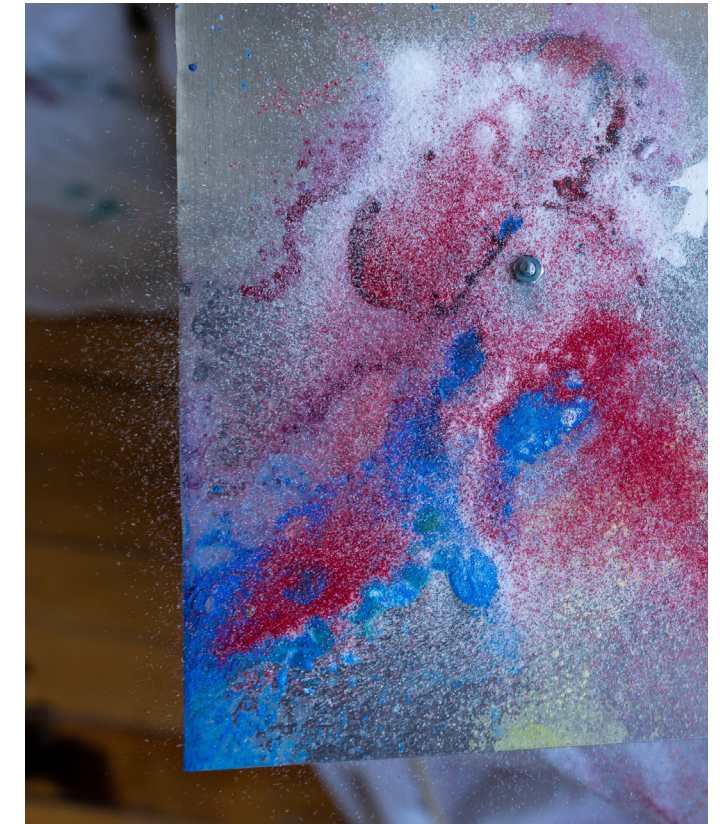


FIGURE 36: Thesis Artefact



FIGURE 37: George Frideric Handel, Government Art Collection, UK

SPIRITUAL HARMONY IN A SECULAR WORLD: HANDEL'S MESSIAH

Between these sacred origins and the secular world of today lies German-British composer George Frideric Handel, whose highly renowned piece "Handel's Messiah" has spiritual themes that resonate even to today. Written in the 1700s, this revolutionary composition was an oratorio. What set Handel's work apart from others was his focus:

The human response to the divine.

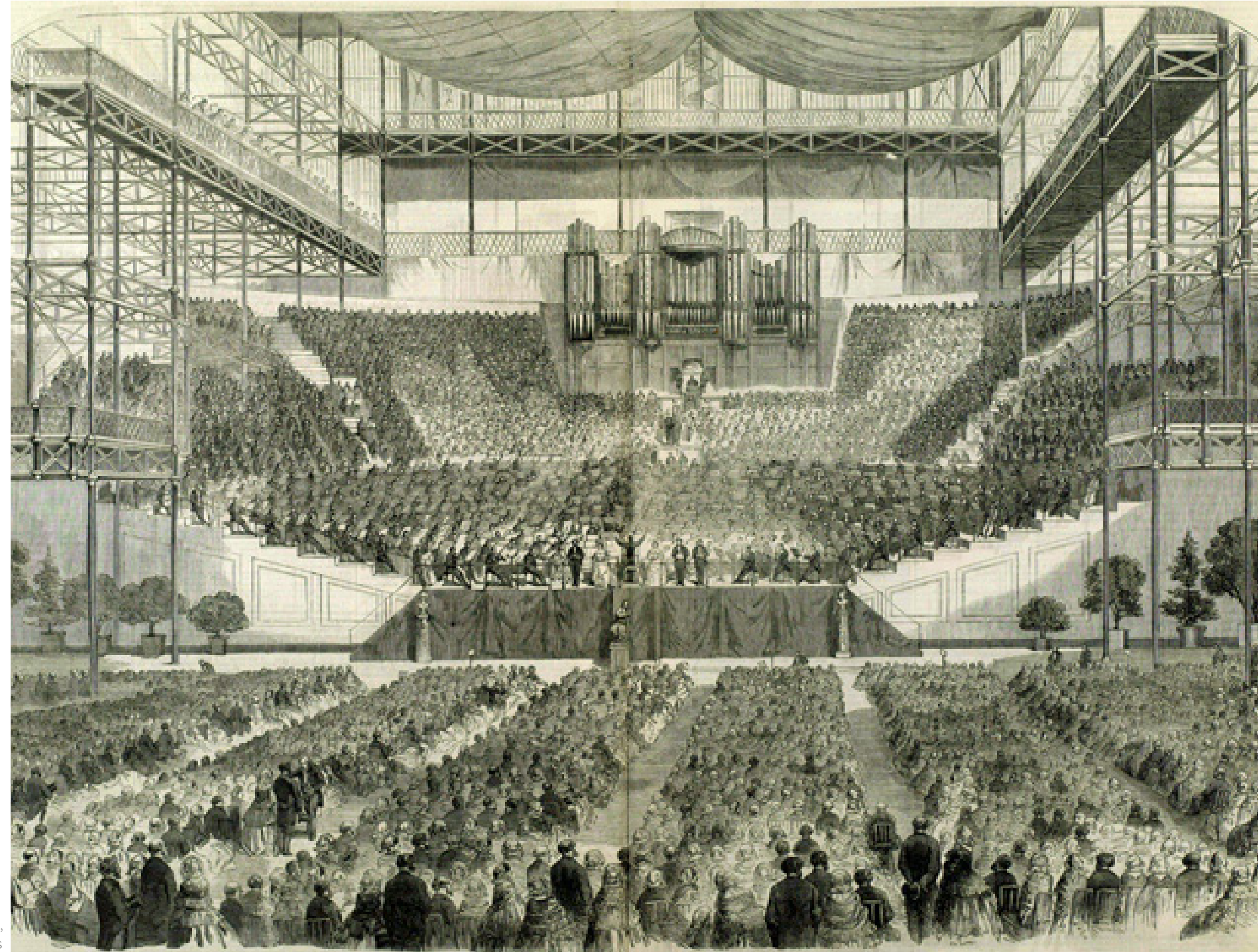


FIGURE 38: The Handel Festival at the Crystal Palace, 1857, The Illustrated London News

The work consists of four soloists, a chorus, and an orchestra, and is split into three parts – a symbolic number in both music, spirituality (the Holy Trinity) and cosmology (the heavens, earth, and humanity). In each work, the chorus is the absolute heart, highlighted by the infamous chorus of hallelujahs that closes the second part, where still to this day the audience will rise to their feet: a physical response to the spiritual experience. Handel felt this even as he was writing the chorus, where his servant discovered him in tears saying “I did think I did see all Heaven before me, and the great God Himself seated on His throne, with His company of Angels.”

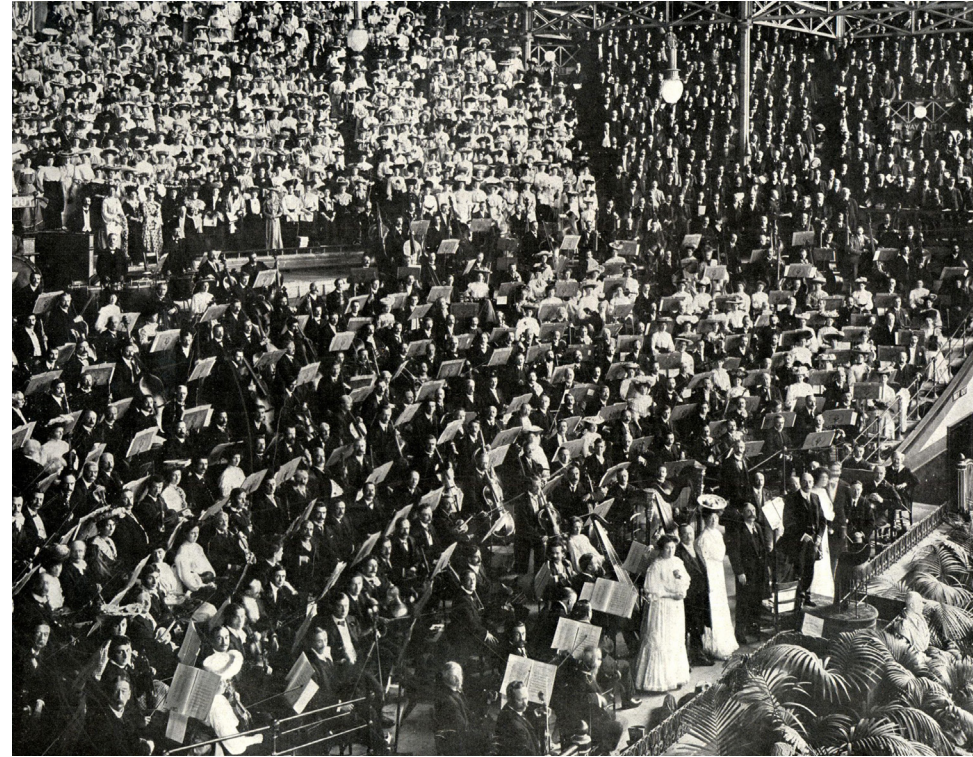


FIGURE 39: Messiah at Crystal Palace, 1905

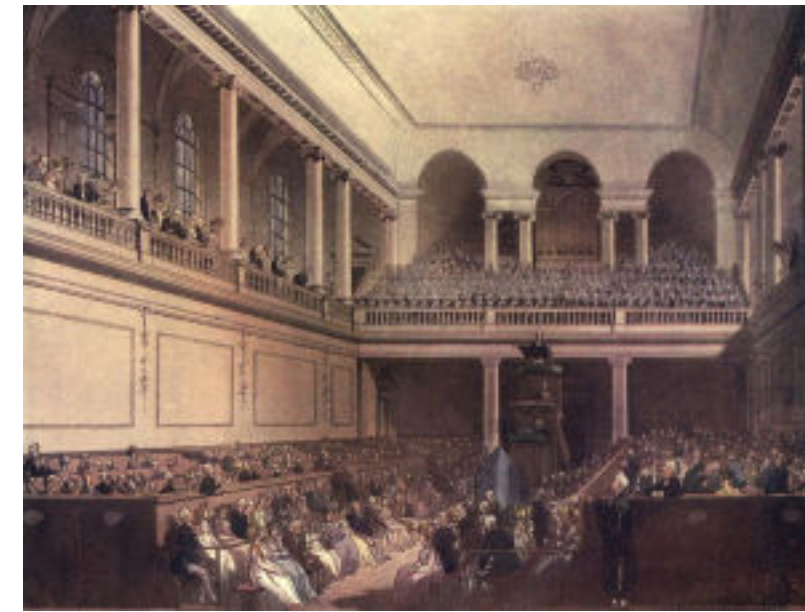


FIGURE 40: Messiah at Foundling Hospital

Here, Perez-Gomez might acknowledge what he calls “potential for unity while acknowledging the bittersweet space of desire that characterizes the human condition” (Perez-Gomez, 2016), as all stand together and join in the heavenly hallelujah. A verse in part one of Messiah affirms this space of desire:

“Yet once a little while I will shake the heavens and the earth, the sea and the dry land. And I will shake all nations; and the desire of all nations shall come.”

- Part I of Handel's Messiah, from Haggai 2:6-7

SITE LOCATIONS

GROUNDS FOR RESURRECTING SPIRITUAL HARMONY

What is so remarkable about Handel’s Messiah has been its unwavering popularity in the modern world and incredibly common appearances on secular stages. Despite religious traditions, its spiritual themes have been able to translate to the secular world, still resonating with a modern audience. This hums with unity, extending from sacred origins despite shifting world views, and joins the cosmic chorus in what Perez-Gomez defines the “triumph of symphony of discordant voices”, reinforcing its spiritual echo. This narrative pioneers the resurrection of spiritual harmony that my thesis seeks to allow the discovery of. As a masterful composition of three parts, its story provides three interrelated sites that ground my proposal.

BOSTON, MASSACHUSETTS

DUBLIN, IRELAND

LONDON, UNITED KINGDOM



FIGURE 41: Globe Perspective

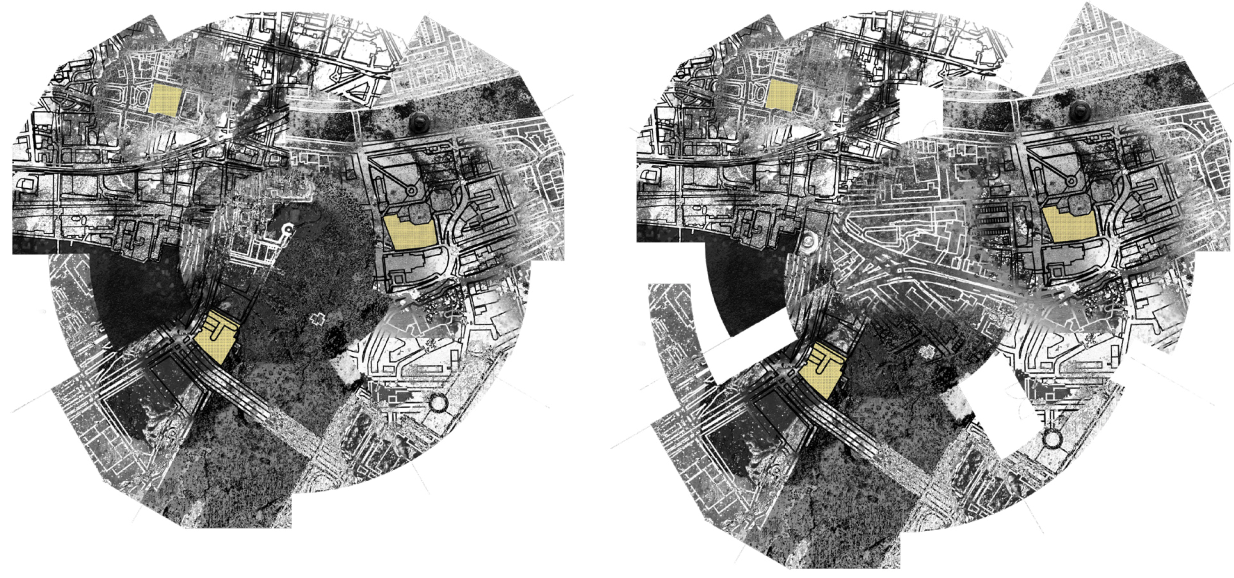
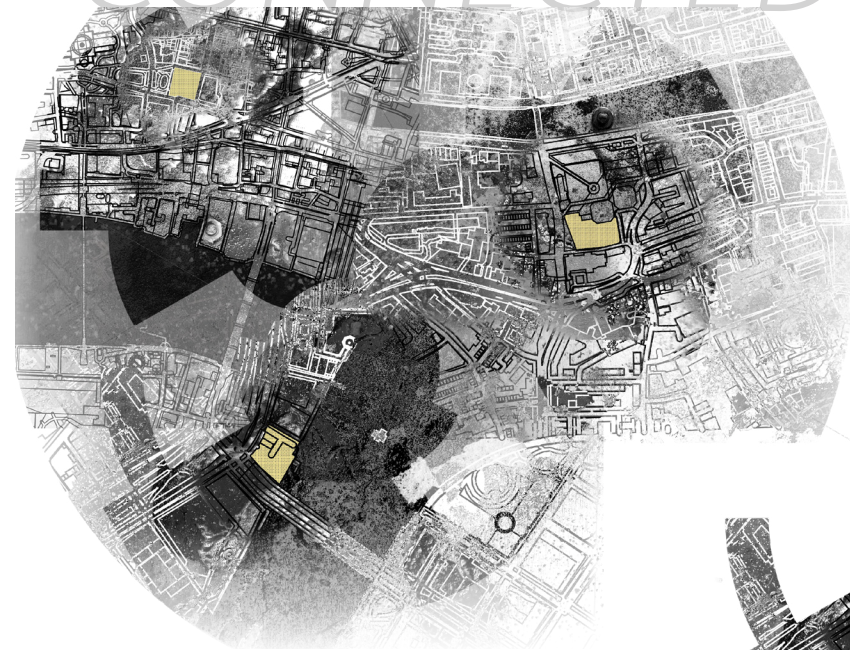
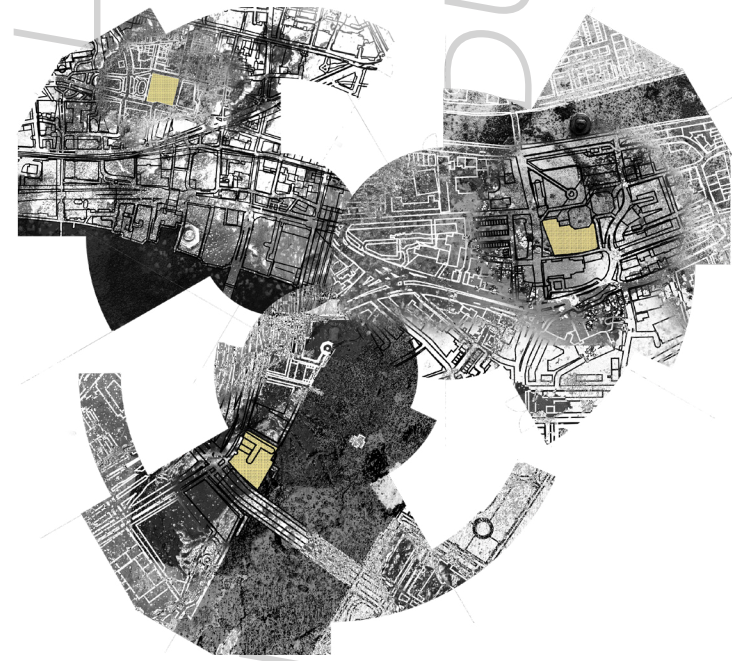


FIGURE 42: Unfolding Sites

LONDON
DUBLIN
BOSTON



CONNECTED ACROSS A DISTANCE

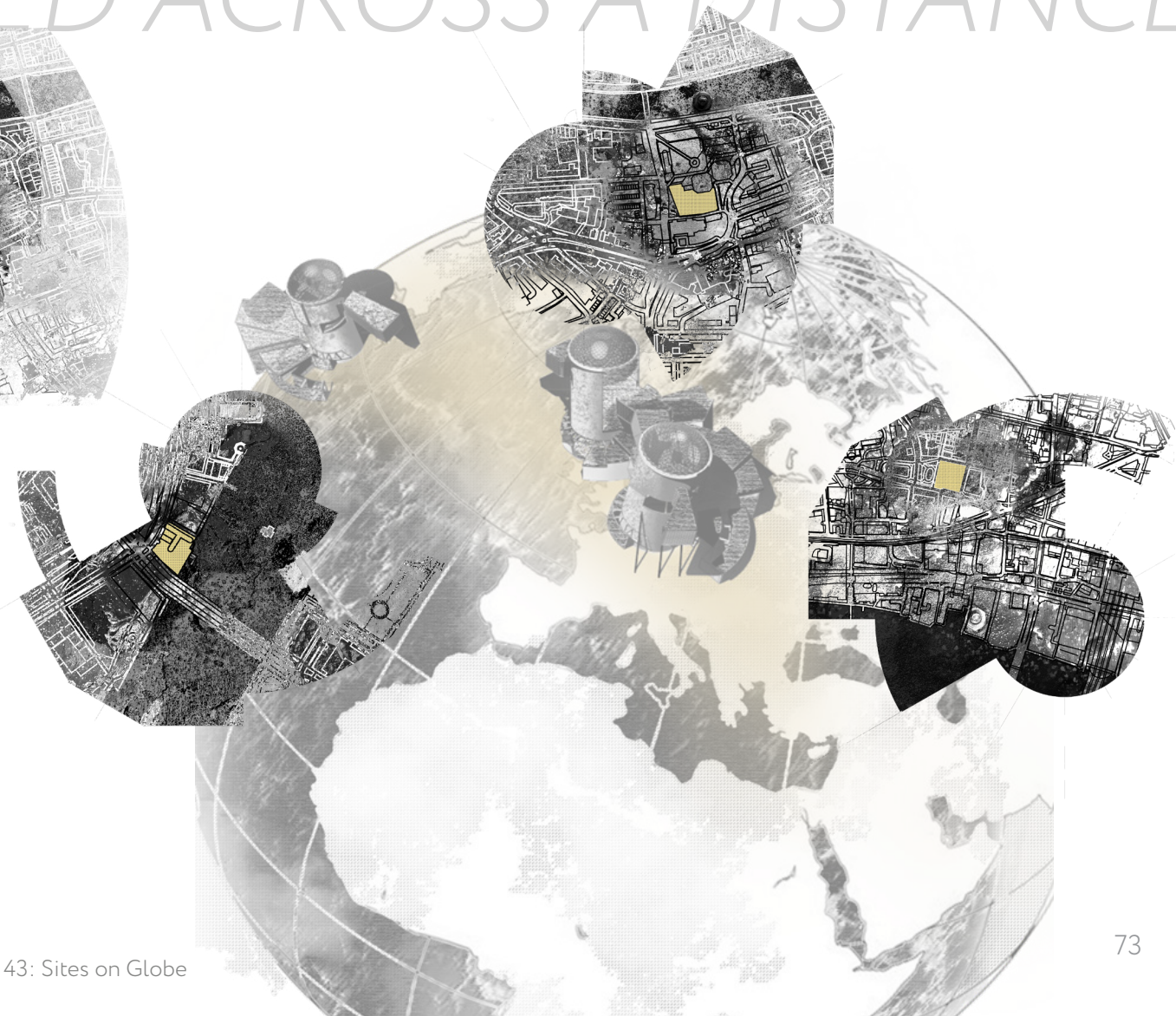


FIGURE 43: Sites on Globe

I.

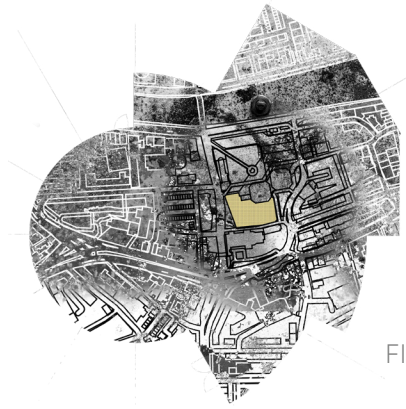


FIGURE 44a: Dublin Site

DUBLIN, IRELAND

Located on Fishamble Street, where Handel's Messiah first premiered, this first site represents where the poetic seed of spirituality is planted. Situated between the Dublin City Council building and the Christ Church Cathedral, its location is an analogical bridge between the separation of the secular and the spiritual.

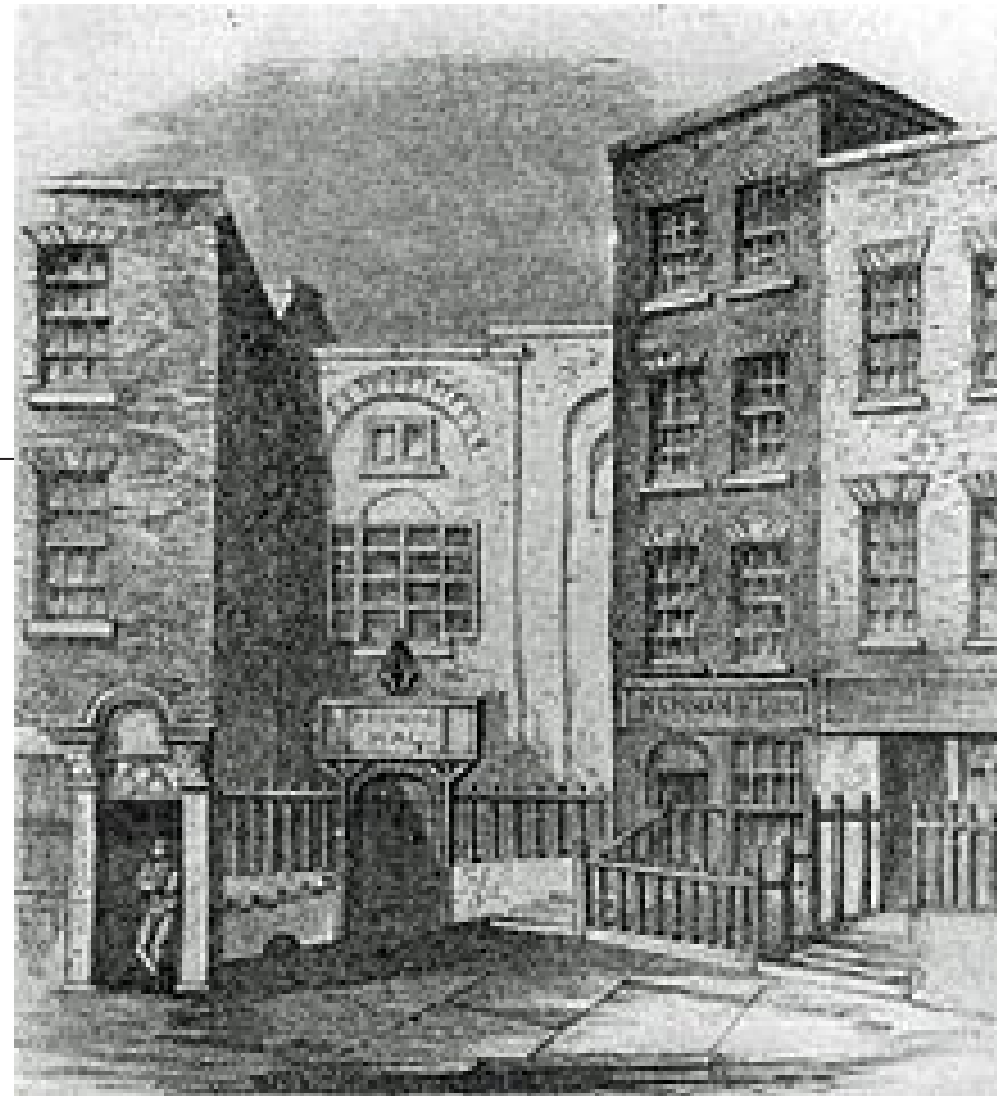


FIGURE 44b: Messiah Premiere, Fishamble Street

II.

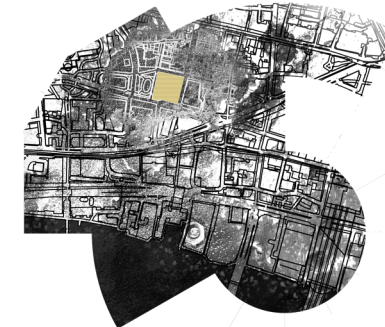


FIGURE 45a: London Site

LONDON, UNITED KINGDOM

After its premiere, Handel's Messiah was performed in London, where it eventually exploded. Countless iconic performances were held here, and Handel himself was buried at the St. Paul Cathedral, where the next site sits adjacent to. Here, the poetic seed grows.

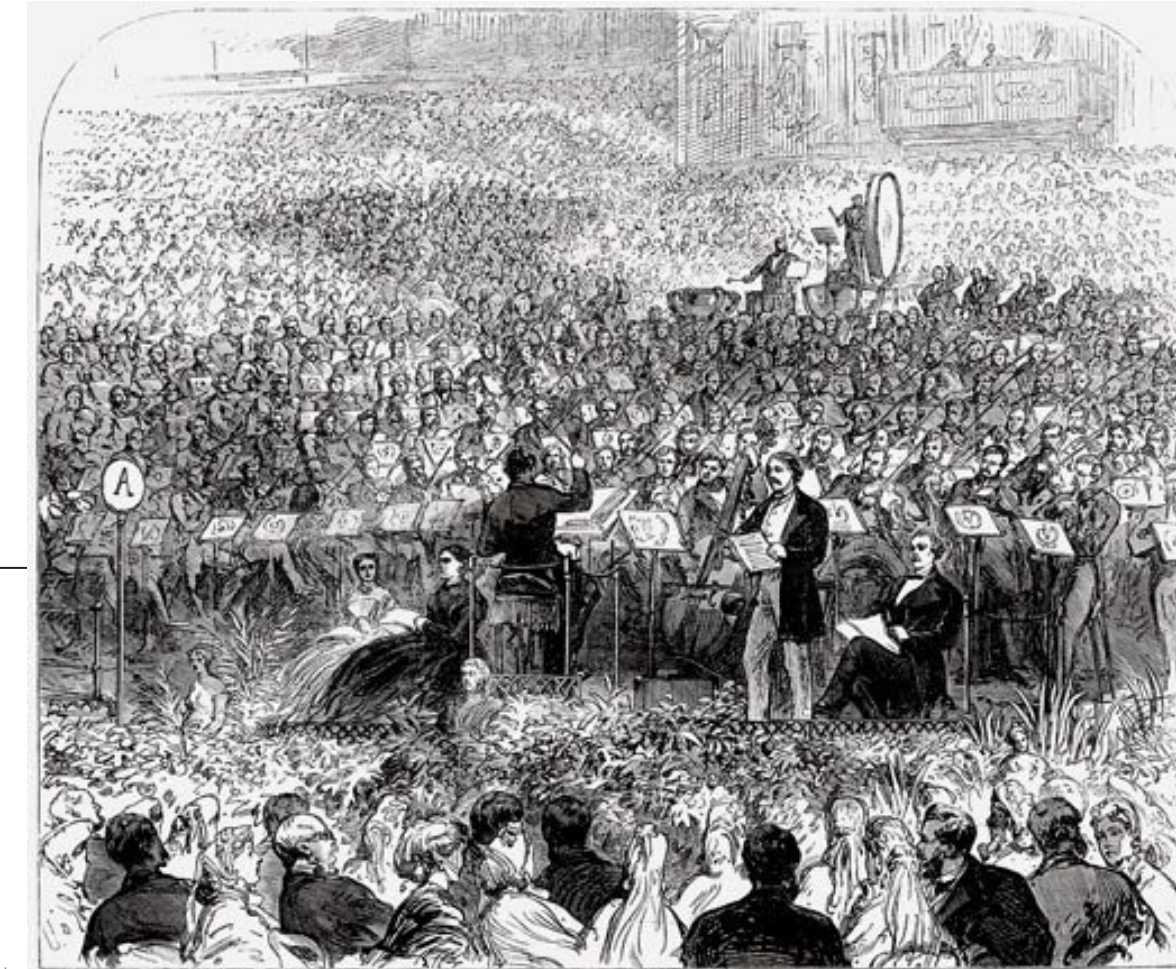


FIGURE 45b: Handel Festival at Crystal Palace, The Granger Collection

III.

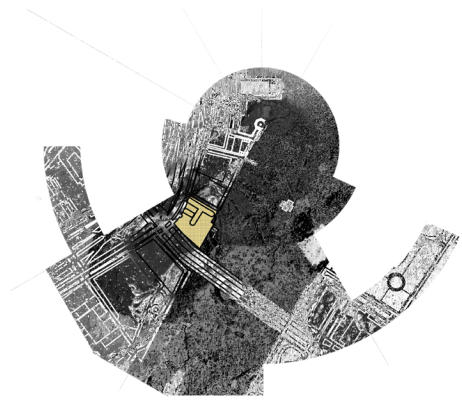


FIGURE 46a: Boston Site

BOSTON, MASSACHUSETTS

Handel's Messiah began to make appearances in the U.S., with Boston being a primary location for it. This site sits on the coast, facing east to the European sites that also sit near the water, a metaphorical common stream across the distance that reflects connectivity. The poetic seed is propagated, and continues to grow.

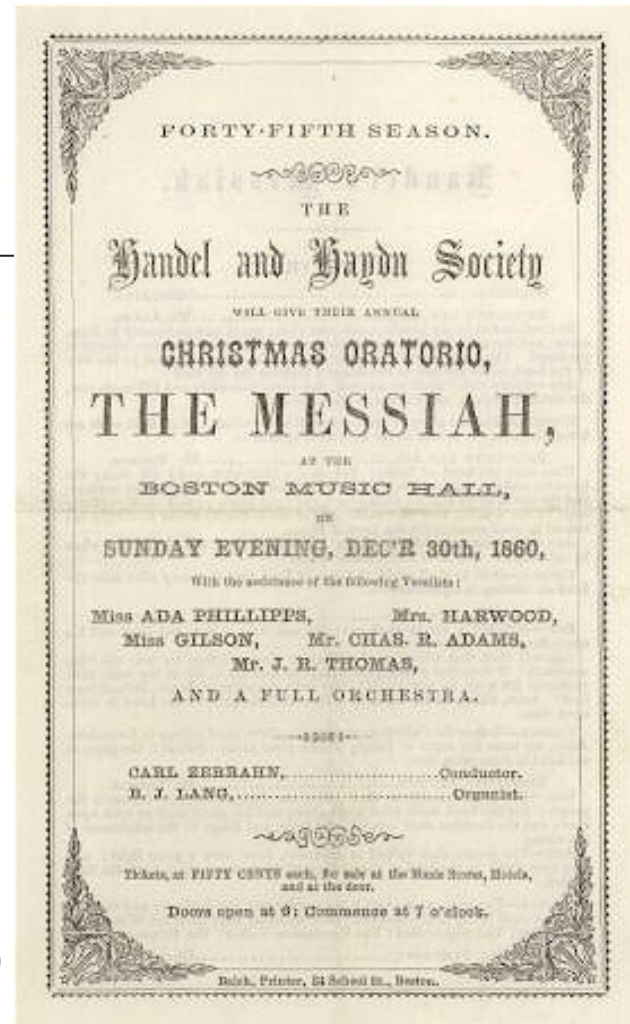


FIGURE 46b: Messiah program, Boston, 1860

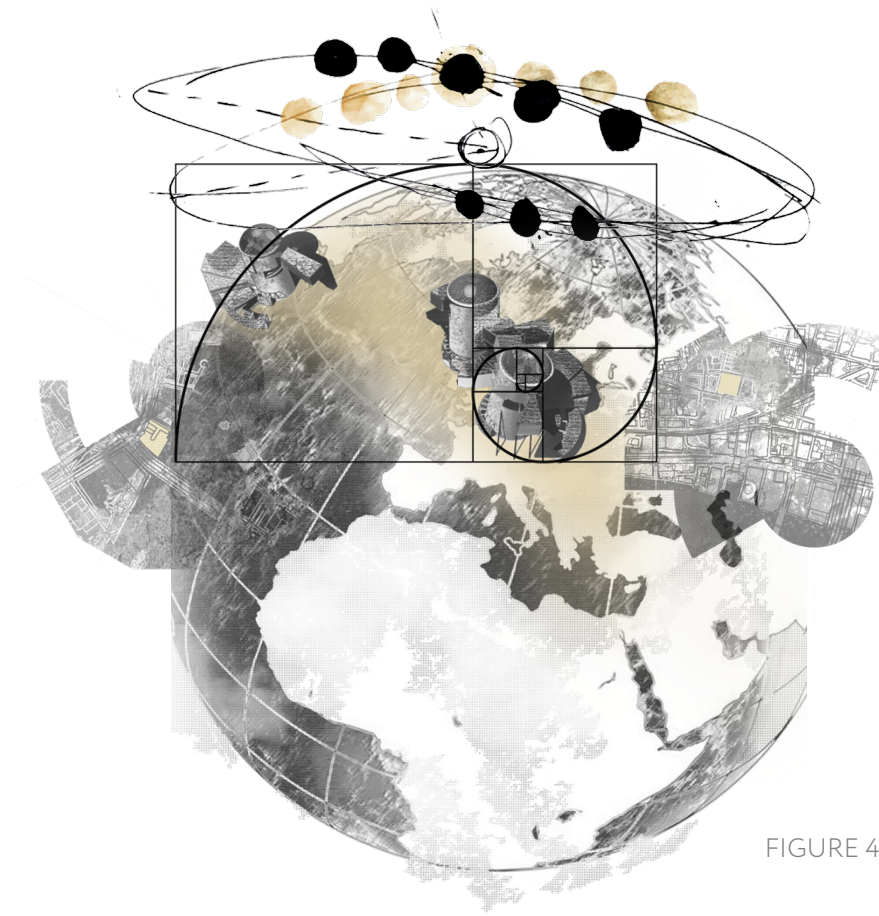


FIGURE 47: Globe with Orbits

Like stars in a constellation, the structures that span these three sites are parts of a whole, digging its roots in the much deeper narrative of cosmic interconnectivity, functioning analogically as a symphony of their own: connecting things near and far, tangible and intangible, and the self with Otherness in a poetic quest to situate humanity between the earth and the heavens.



PROGRAM

PERFORMING ARTS CENTER
COSMIC GALLERIES

These architectural spaces are based on a performing arts center program, attached to cosmic galleries of light, sound, and connection. With a focus on music and astronomy as vessels for discovery, it illuminates spirituality by its atmosphere, through the nature of an eclipse: shadows making present that which is absent from our view, blocking the out the Sun, yet leaving a soft penumbra of its light – a paradox of partiality that reveals wholeness.

FIGURE 48: Solar Eclipse, NASA

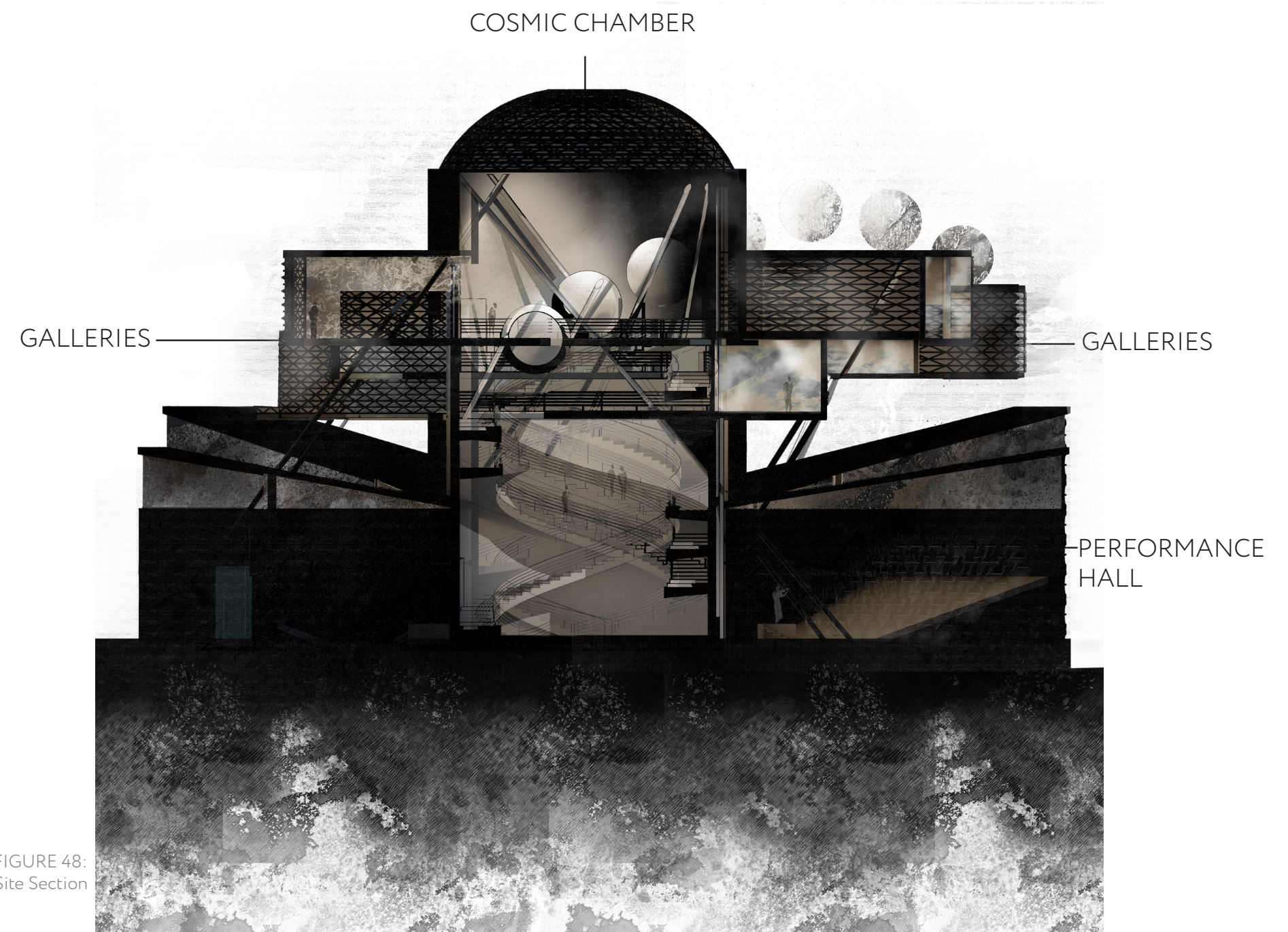


FIGURE 48:
All Site Section

LIKE PHASES OF THE MOON, EACH OF THE THREE STRUCTURES COME TOGETHER AS ONE,



FIGURE 50a: Moon Phases

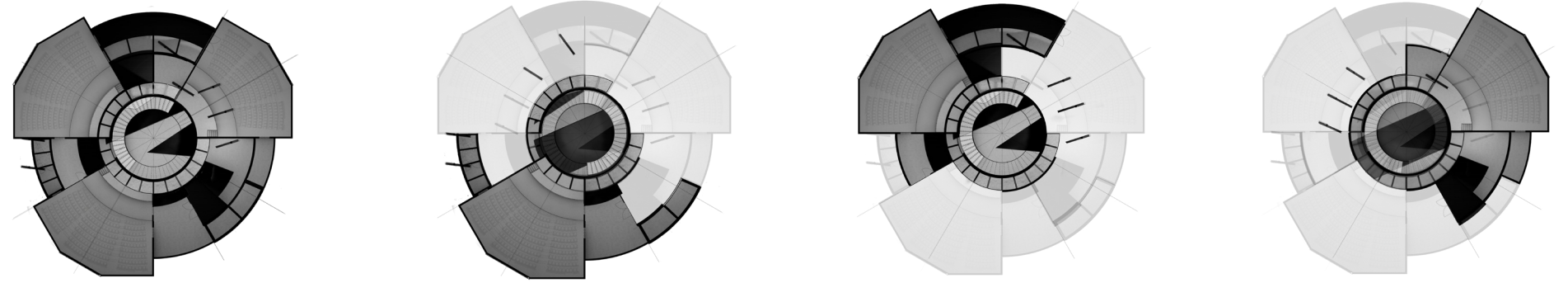
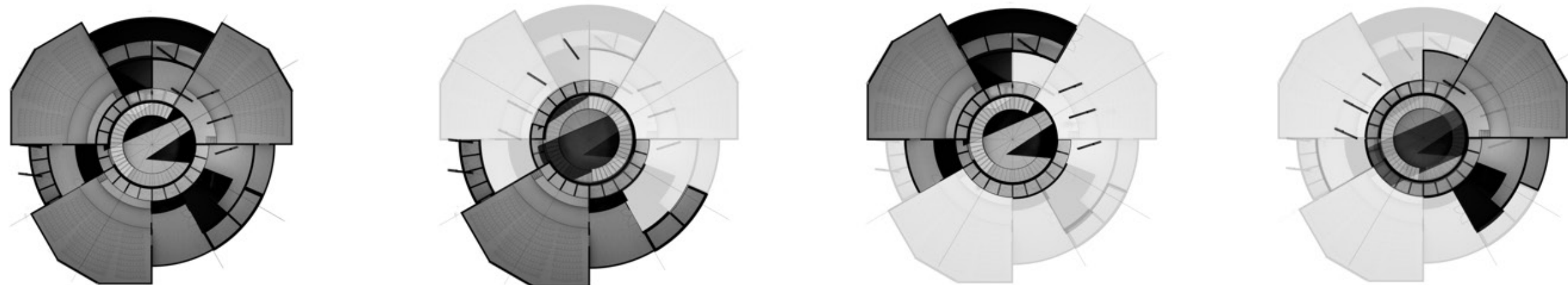


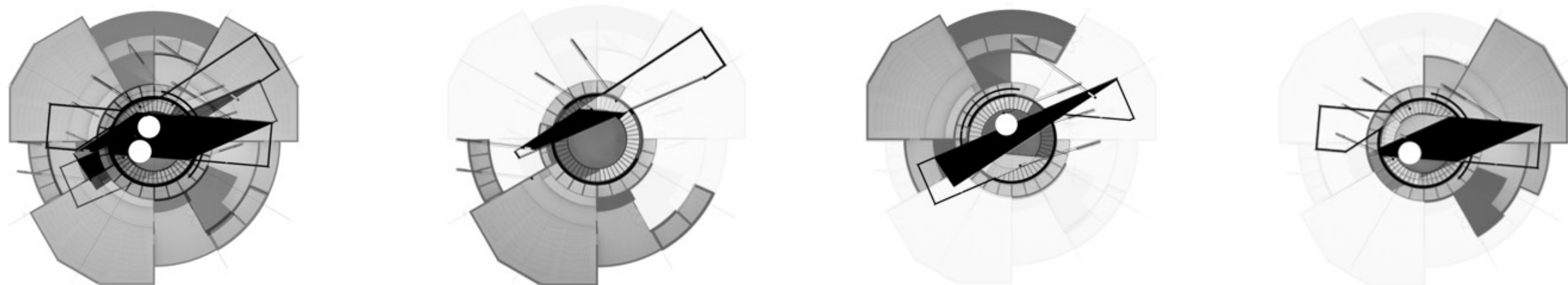
FIGURE 50b: Unfolding Ground Plan

ITS FORM REVEALED IN PART AS IT UNFOLDS.

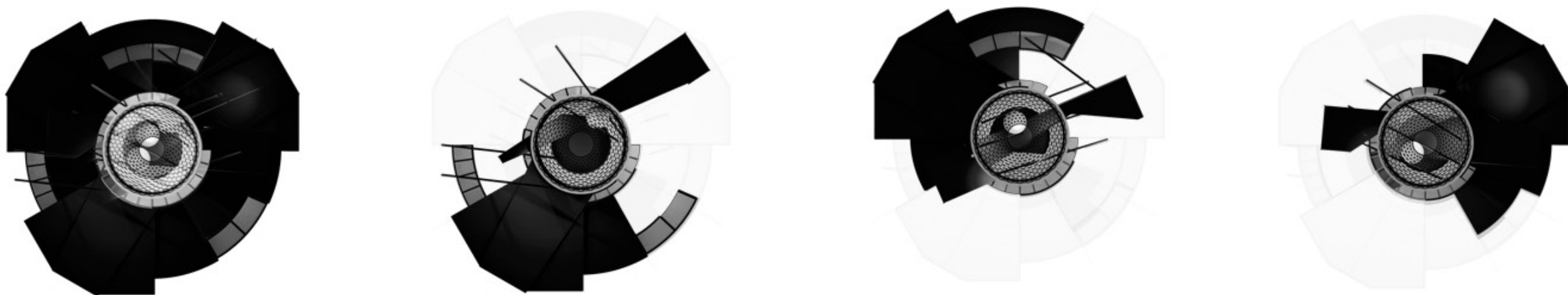
GROUND LEVEL



UPPER LEVEL



SITE



They are experienced in one place, yet inherently connected across a distance through the journey within each, a reflection of our souls' search for wholeness found outside of ourselves: in essence, spirituality.

FIGURE 51: Unfolding Plans

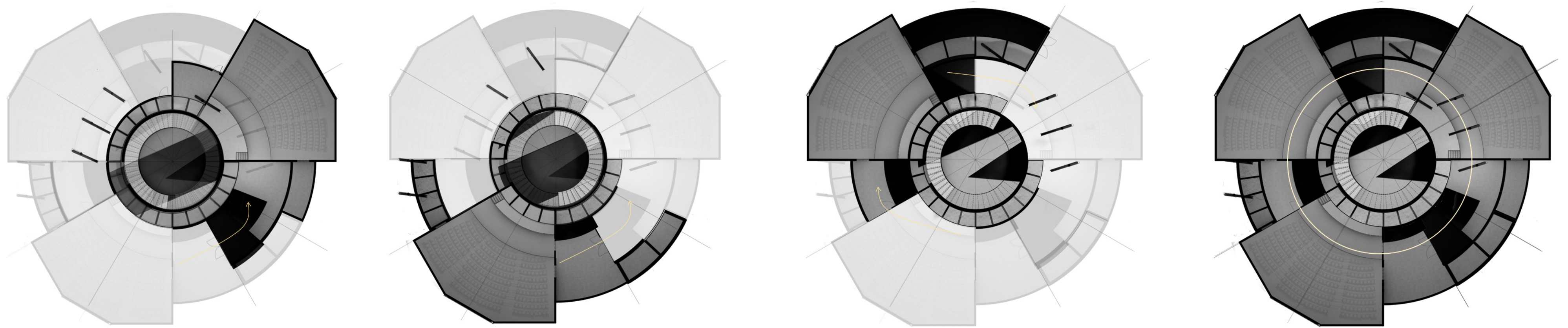


FIGURE 52: Orbit Across a Distance

AT ANY GIVEN SITE, THE JOURNEY BEGINS THROUGH
ONE STRUCTURE WHERE THE JOURNEY ENDS IN ANOTHER,
COMPLETING AN ORBIT ACROSS A DISTANCE.



FIGURE 53a: Dublin Section



FIGURE 53b: London Section

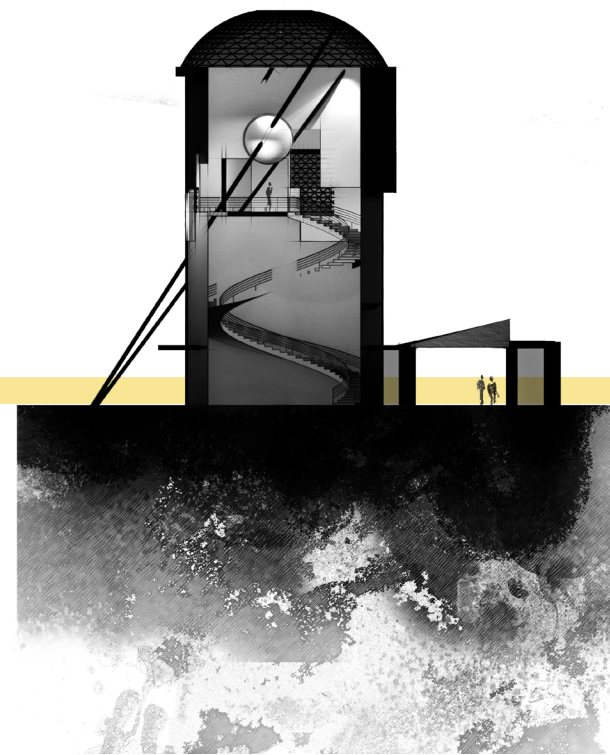


FIGURE 53c: Boston Section

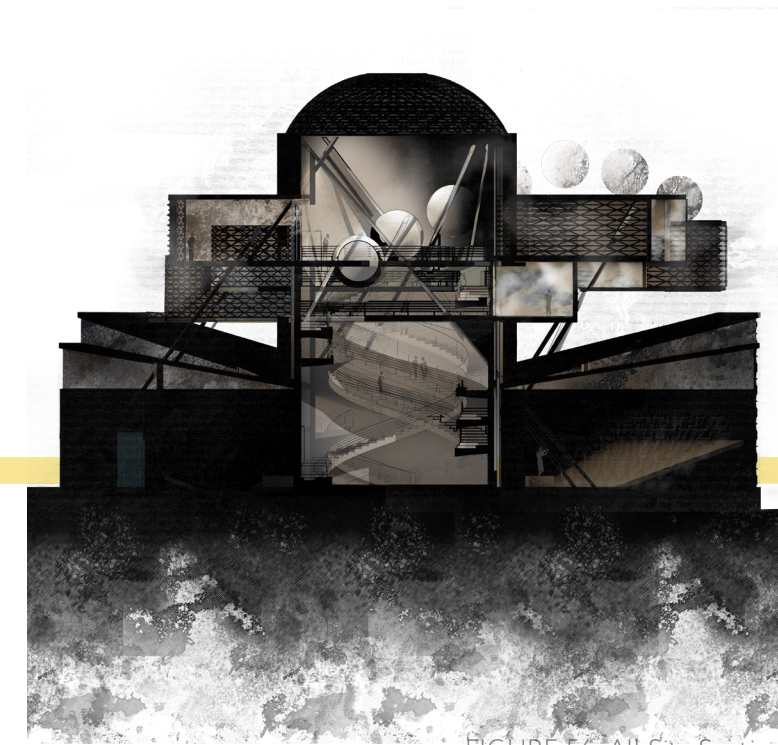


FIGURE 54: All Site Section

The first level in each holds a performing arts hall, a canvas to tell generations of stories and draw connections through music, dance, and theater.

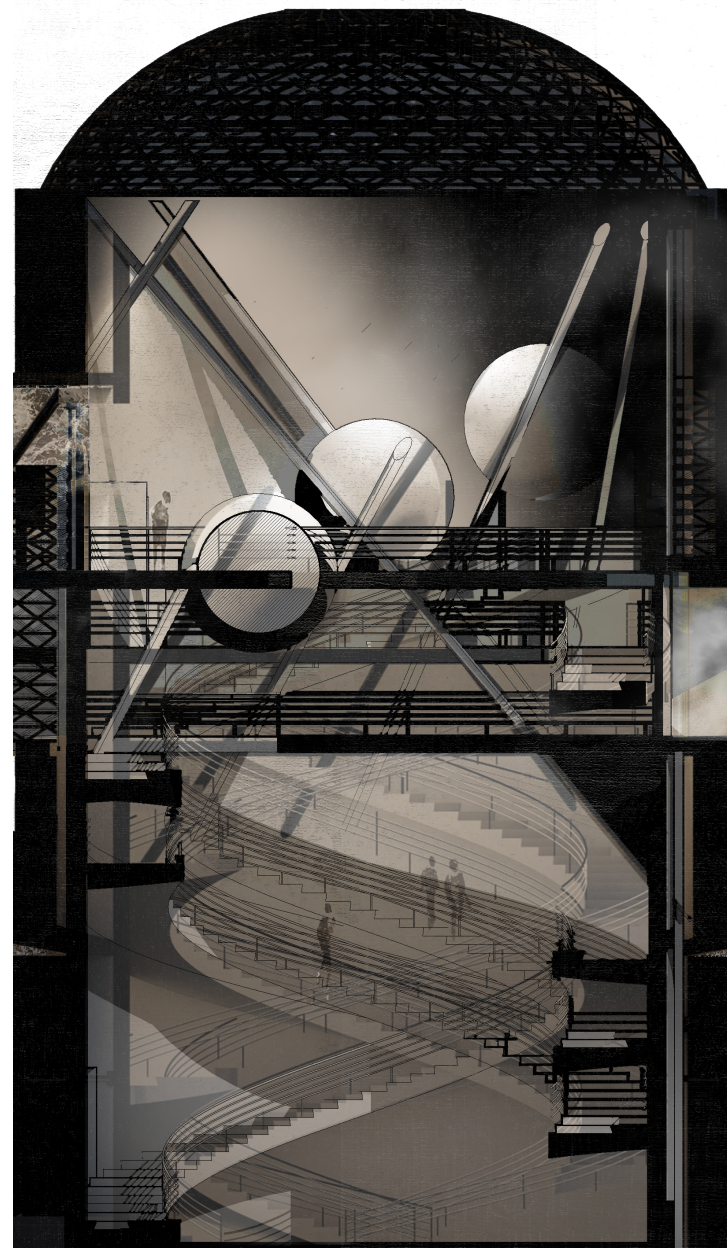


FIGURE 55a: Chamber Section

These performance halls are joined to a cosmic chamber, the anchor point of each site, acting as an axis by which the structure revolves around. Crowned with a glass dome that is reminiscent of the heavenly realms, this chamber holds a monumental staircase to the upper level, an upward journey guided by cosmic light and sound.

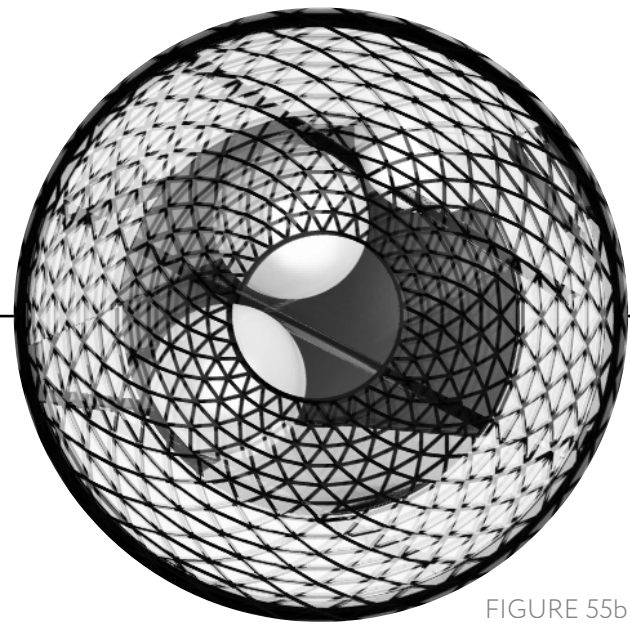


FIGURE 55b: Glass Dome Plan

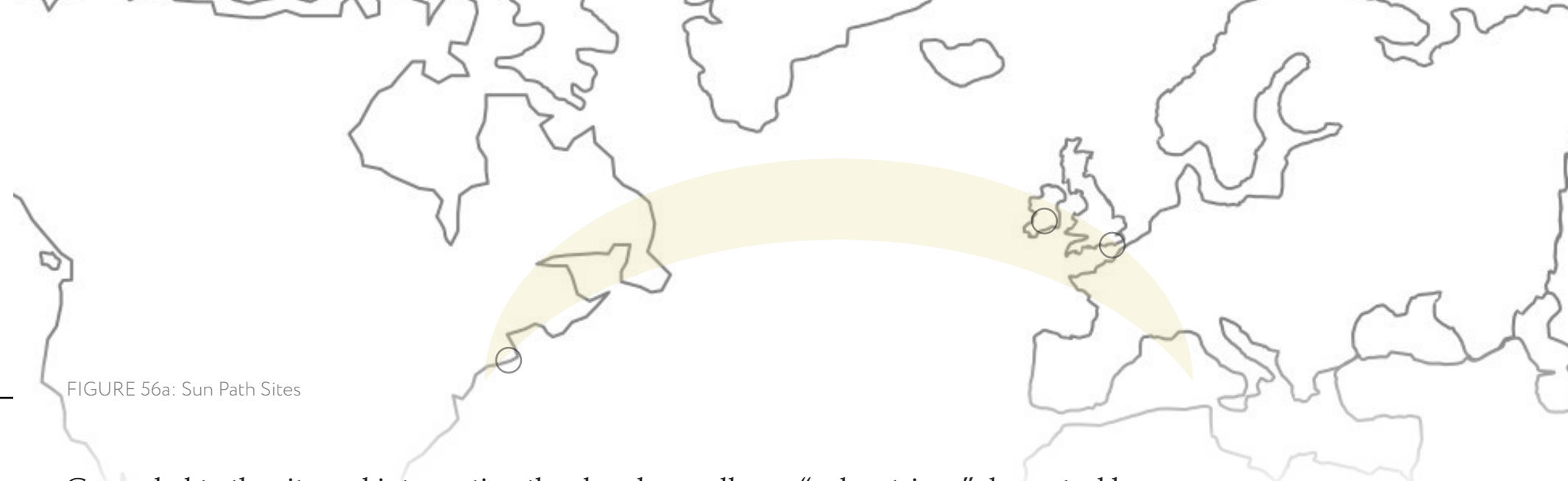
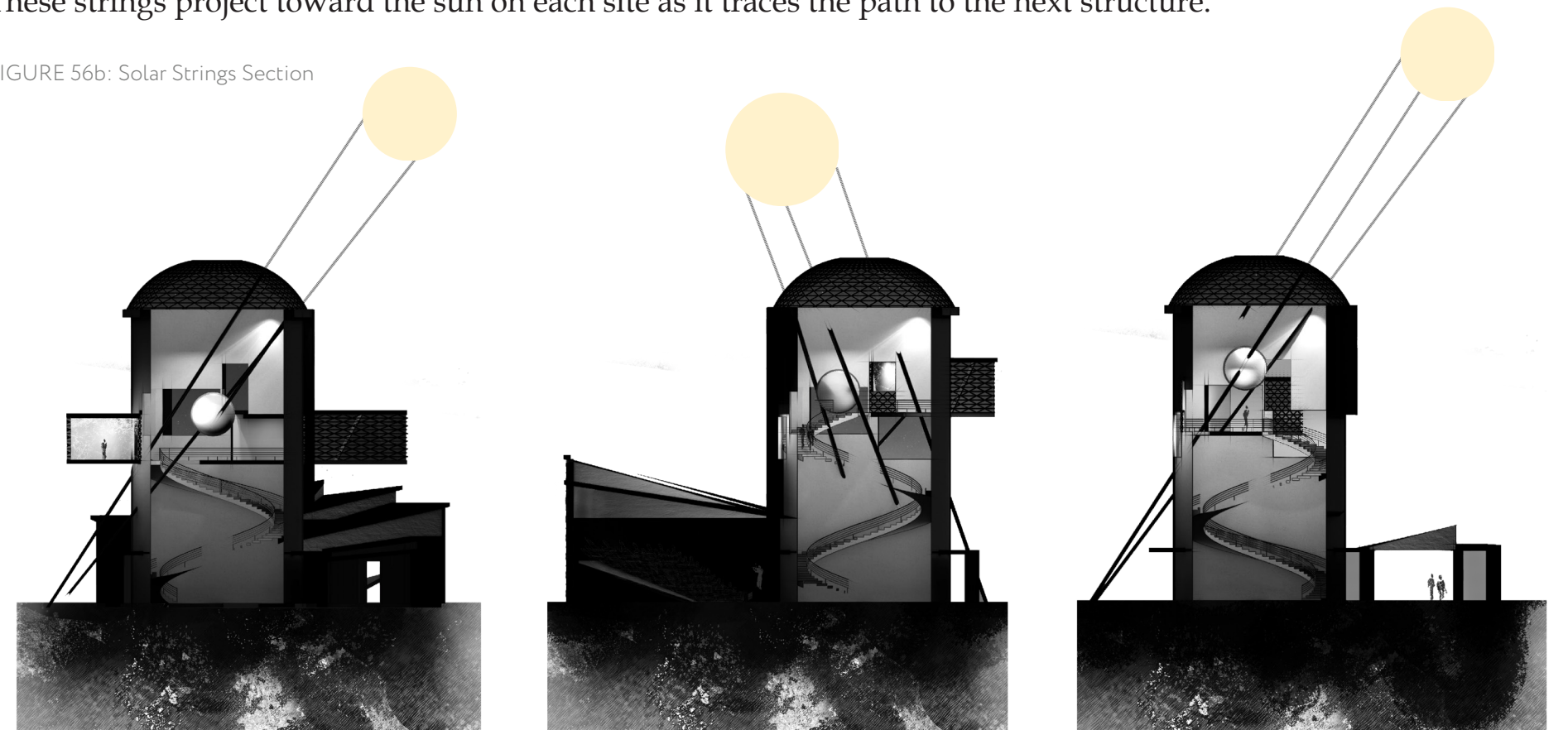


FIGURE 56a: Sun Path Sites

Grounded to the site and intersecting the chamber walls are “solar strings”: long steel beams reminiscent of an instrument and its vibrations made visible, vibrations that connect all matter. These strings project toward the sun on each site as it traces the path to the next structure.

FIGURE 56b: Solar Strings Section



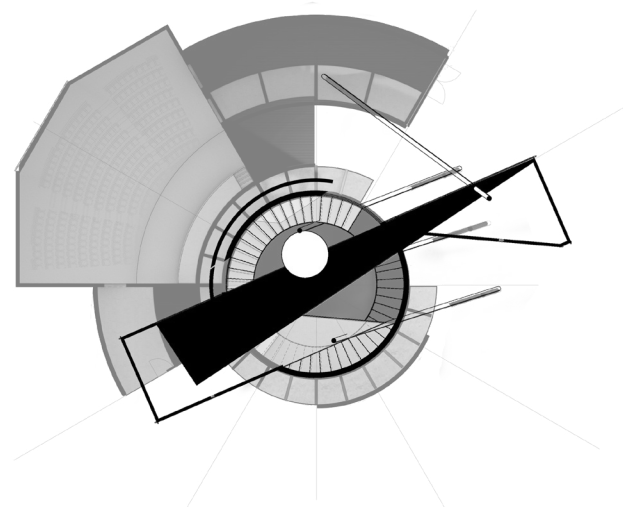


FIGURE 57a: London Upper Level Plan



FIGURE 57b: London Moon Perspective

FIGURE 58a: All Sites Moon Perspective

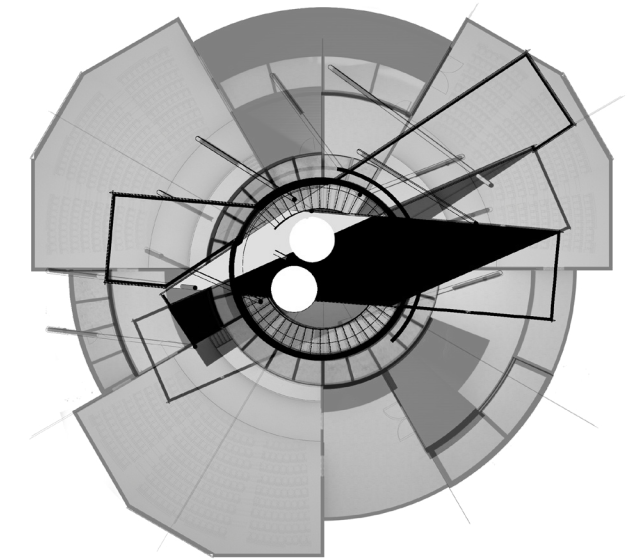


FIGURE 58b: All Sites Upper Level Plan

Climbing upward, a moon-like sphere is caught in the network of solar-strings and suspended in the light of the sun, casting a dance of shadow and light on the chamber walls.

It echoes across the distance, where the next “moon” has shifted in orbit.

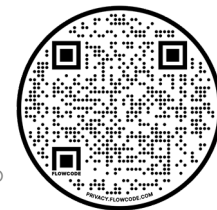
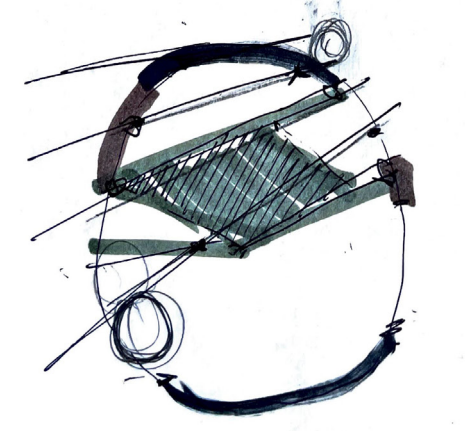
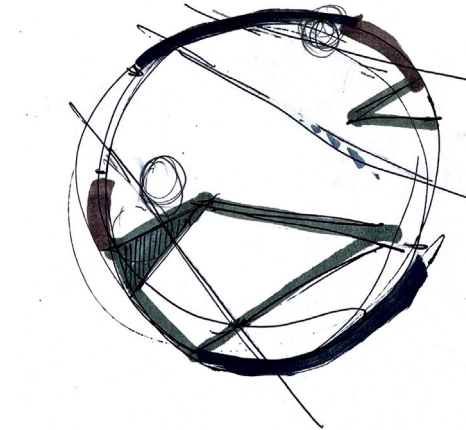
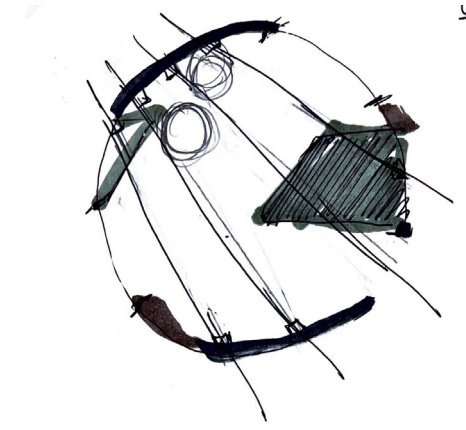


FIGURE 57c: Interior Video

Here, the individual joins in a cosmic chorus, united not only with those on a journey in the next site, but with the very Sun and stars, in an attempt to awaken awareness to the cosmic attunement that crescendos with the upward journey.

FIGURE 59a: Chamber Plans Sketch



PROCESS DRAWINGS: COSMIC CHAMBER

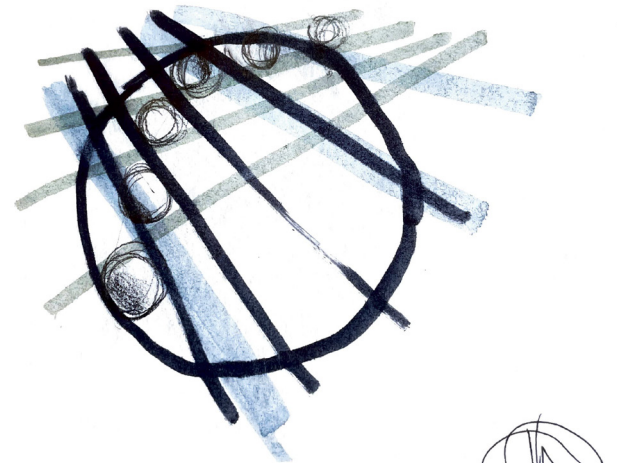


FIGURE 59b: Chamber Plan Sketch

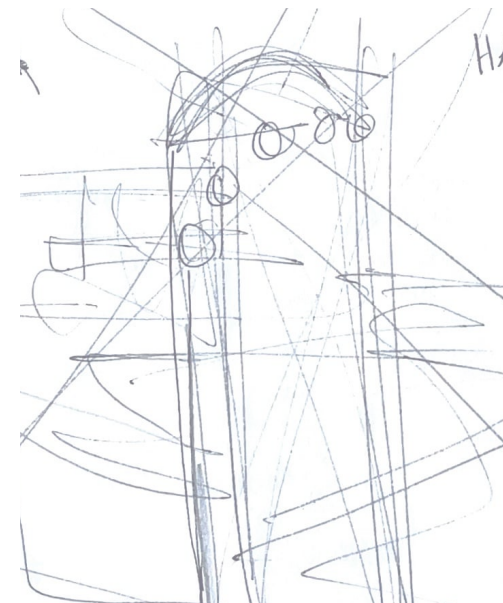


FIGURE 59c: Chamber Section Sketch

The end of the climb brings you the galleries. These galleries are within uniform structures that penetrate through the chamber, their forms manipulated by where they intersect each other - translating as voids in the walls of the next structure.

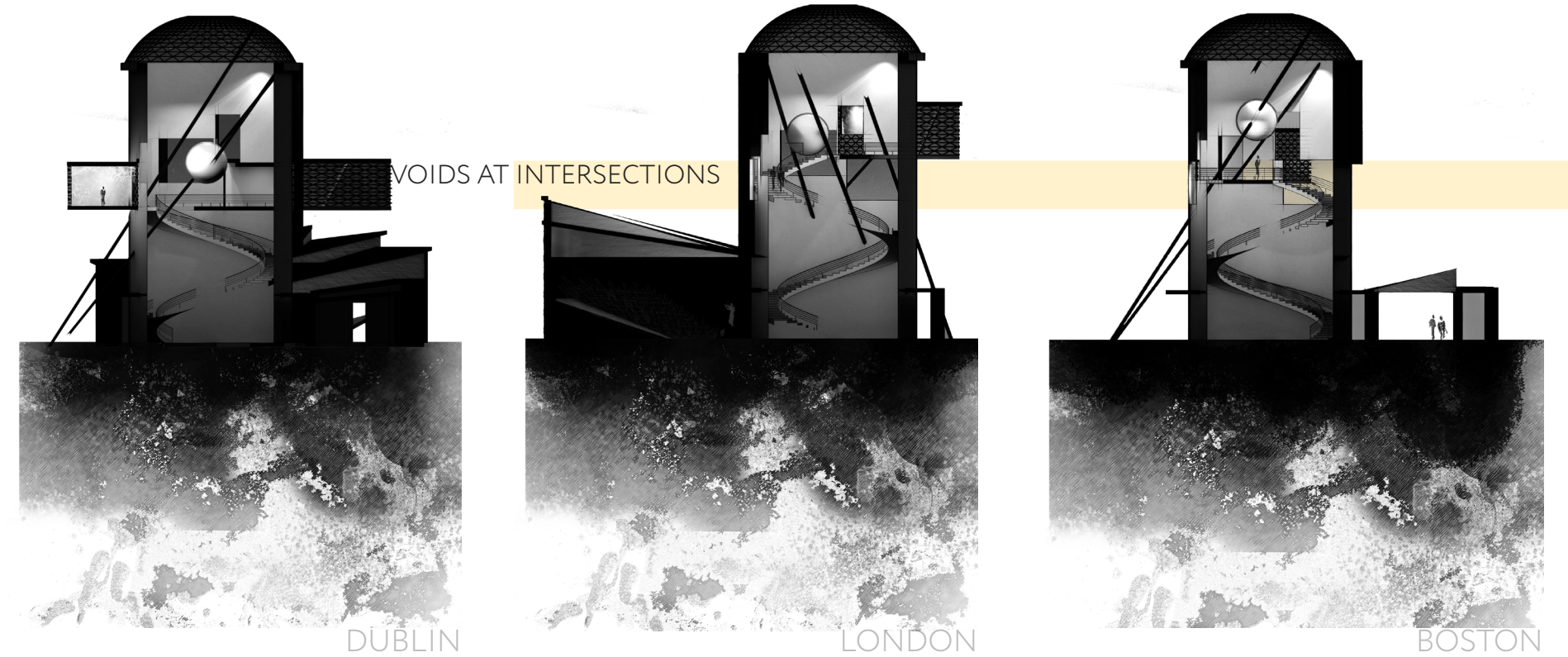


FIGURE 60: Section Intersection Voids

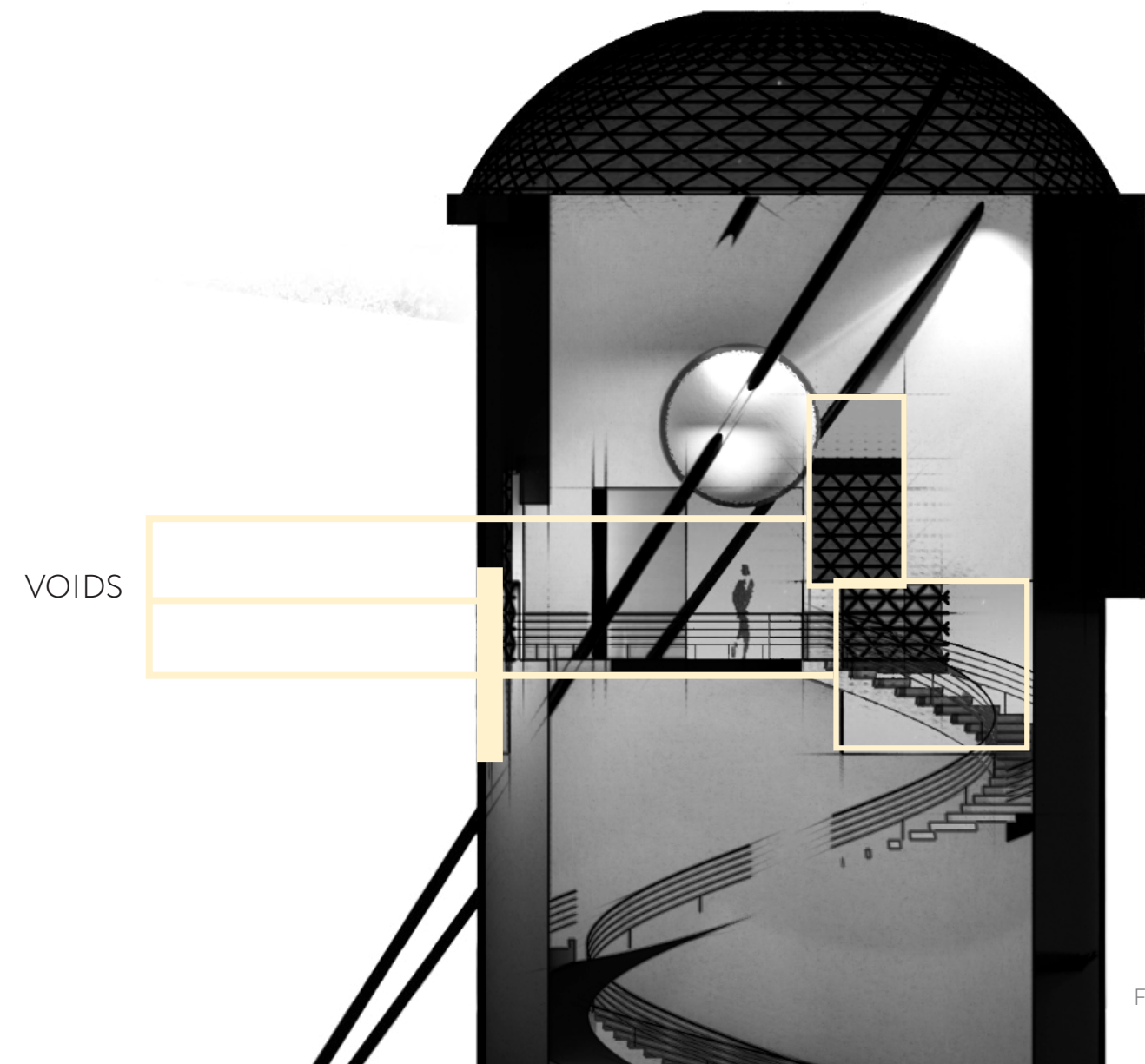


FIGURE 61: Section Intersection Voids

PROCESS DRAWINGS: GALLERY INTERSECTIONS

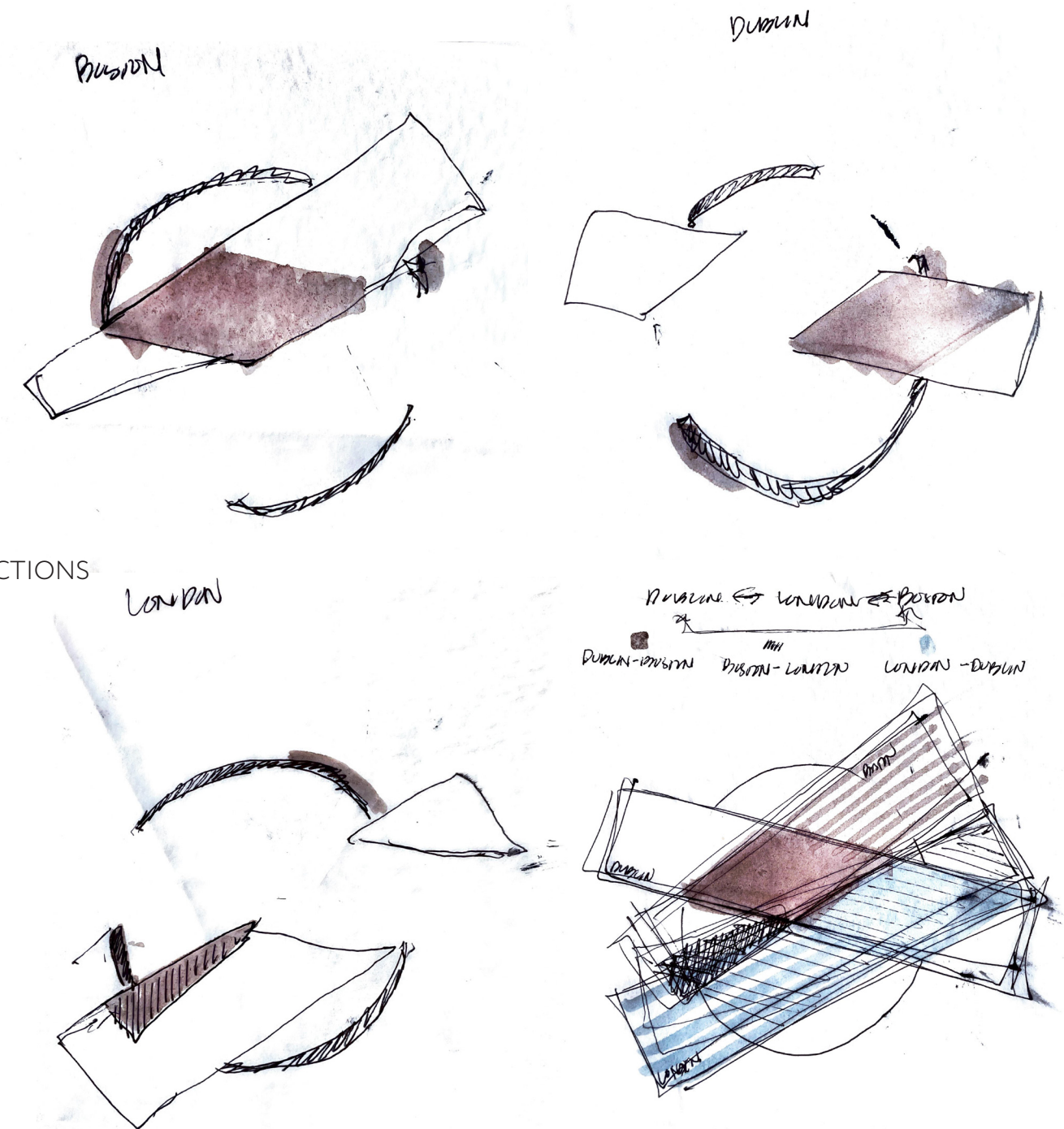


FIGURE 62: Gallery Intersection Sketches

SHADOW FLOORS

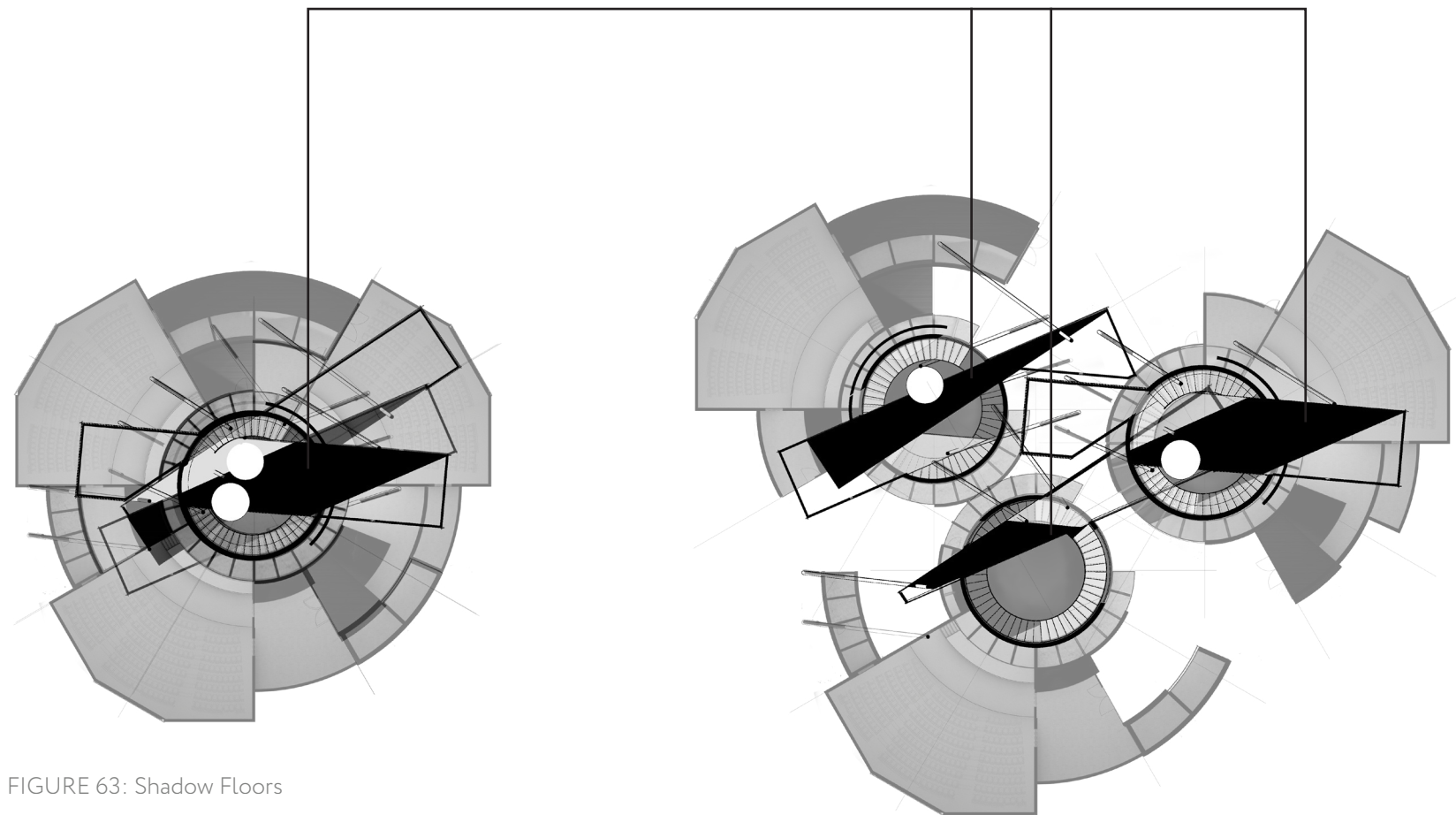


FIGURE 63: Shadow Floors

Along with voids, the footprint of these galleries translate across the distance as shadow floors in the next structures - another eclipse illuminating the presence of one building through the shadow and subtraction of another.

TIDE GALLERIES

CLOUD GALLERIES

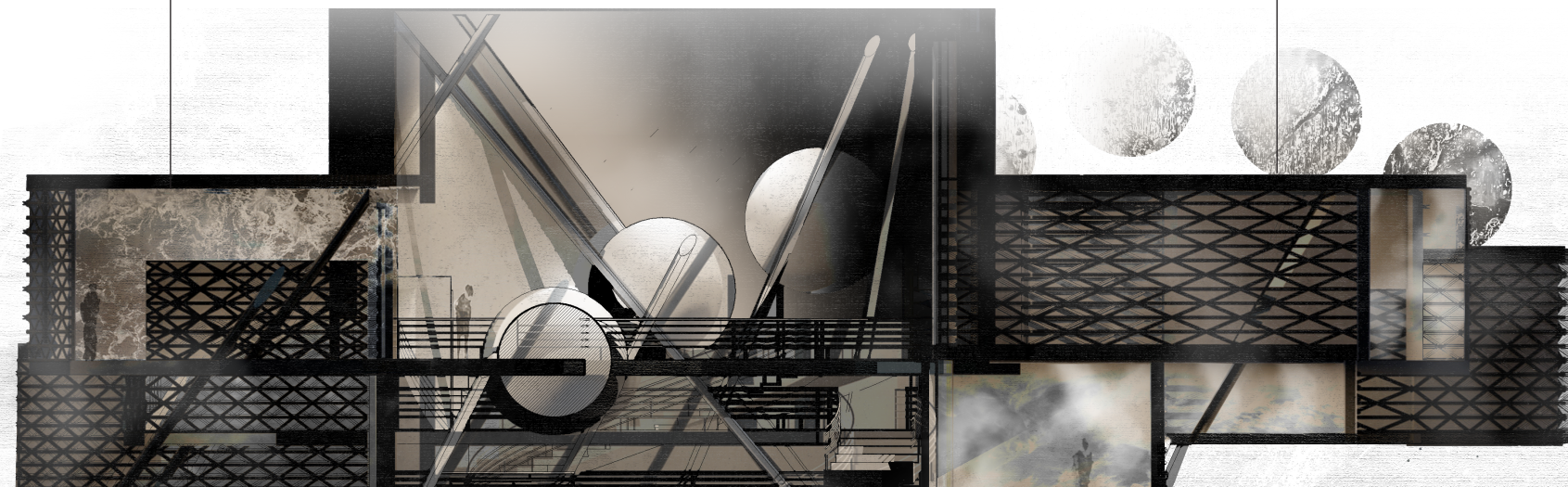


FIGURE 64: Galleries Section

These galleries are filled with projections of natural phenomena occurring at the next sites: the tide patterns at one end and the cloud patterns at the other. In addition, they serve as rotating spaces for exploratory art that attempt to make present cosmic connections.

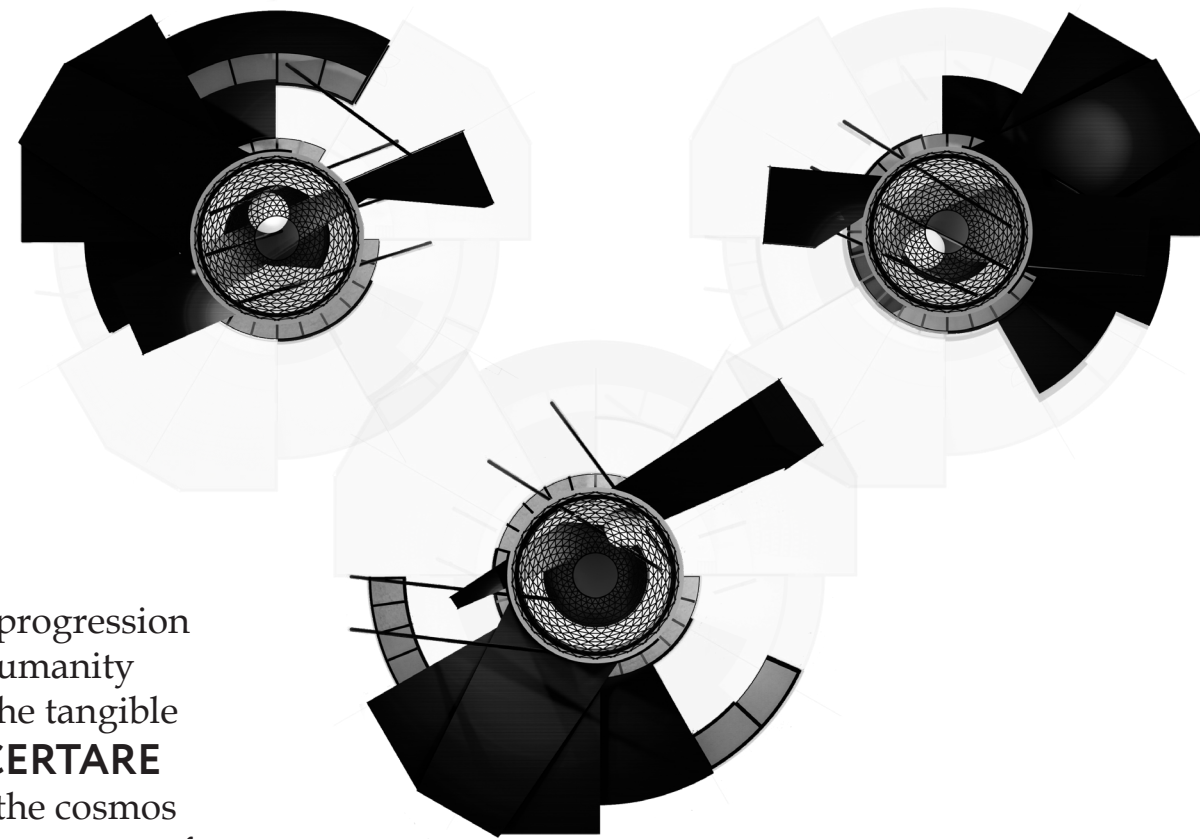
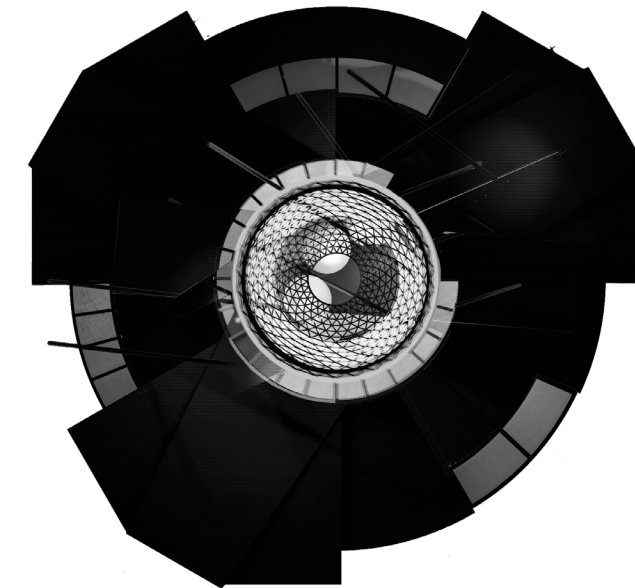


FIGURE 65: Site Plan Fragments

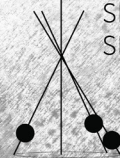
Unified in a flickering progression of light and shadow, humanity and the heavens, and the tangible and intangible, **CONCERTARE** brings a symphony of the cosmos down to earth within fragments of space connected as whole across a distance, weaving the micro and macrocosm:



TO REVEAL OUR CONNECTION TO ALL THINGS AND **REDISCOVER SPIRITUAL HARMONY IN A SECULAR WORLD.**

CONCERTARE:

AN ARCHITECTURAL REDISCOVERY OF SPIRITUAL HARMONY IN A SECULAR WORLD



There is a harmony within chaos between all things, like a cosmic song, and we are not independent of it. In fact, we are inextricably a part of it, contributing to the attunement of the universe with each breath and each heartbeat. Before the rise of modern technology, humanity relied on this harmony for our rhythms and routines. This manifested itself in music and was composed by the motion of the Sun, Moon, and stars, all of which were central to sacred beliefs that became ways of life. Overtime, the advancement of scientific knowledge brought an objective perspective that embraced what we could explain and agree upon, reaping a glorification of our own sense of control. While today science and spirituality can seem to be competing ideas, modern physics has brought string theory, proposing that all matter is a complex network of vibrating strings – bringing us full circle to the universal attunement we once recognized. In this lies a hope for resurrecting a cosmic interconnectivity for a modern world, and stunning potential to do so through music: a universal language that extends through space and time, spoken by both humanity and the cosmos.

To address our fundamental human need for spirituality, this thesis proposes a series of architectural spaces that act as a gallery for cosmic interconnectivity, built around a performing arts center program. Like intervals in a music score, these structures will unfold across three sites: Dublin, Ireland, London, United Kingdom, and Boston, Massachusetts. Grounded by the narrative of Handel's Messiah, other revolutionary musical compositions, as well as the very frequencies emitted by magnetic fields of planets in our solar system, these sites function analogically, as a symphony of their own: connecting things near and far, tangible and intangible, and the self with Otherness in a poetic quest to situate humanity between the earth and the heavens.



FIGURE 66:

FINAL BOARDS

ACKNOWLEDGMENTS

There are so many people who I could not have done this without, but it truly all points back to Jesus, my Lord and savior. From whom every good thing comes from and to whom all glory goes to -- thank you God for your faithfulness and new mercies every morning.

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To all these people and more. Thank you doesn't say enough, but from the bottom of my heart, thank you.

THESIS APPENDIX

REFERENCE LIST

Cantz, H. (2001). Anselm Kiefer: The Seven Heavenly Palaces 1973-2001. Gagosian Gallery.

Colorado College Fine Arts Center. (n.d.). 5 Ws of James Turrell's Roden Crater. Retrieved May 11, 2023, from <https://fac.coloradocollege.edu/5-ws-of-james-turrells-roden-crater/>

Edmonds, M. (2018, October 12). Robert Fludd. Door of Perception. <https://doorofperception.com/2018/10/robert-fludd/>

Edwards, S. M. (2012, December 13). Musings on Musica Universalis: In Which We Consider the Quadrivium [Blog post]. Old World for the New. <https://oldworldforthenew.wordpress.com/2012/12/13/musings-on-musica-universalis-in-which-we-consider-the-quadrivium/>

Fabrizi, M. (2020, November 1). Architecture as a mnemonic device: Robert Fludd's Temple of Music. Socks-studio. Retrieved May 10, 2023, from <https://socks-studio.com/2020/11/01/architecture-as-a-mnemonic-device-robert-fludds-temple-of-music/>

Handy, B. (2013, December 16). The Glorious History of Handel's Messiah. Smithsonian Magazine. Retrieved May 10, 2023, from <https://www.smithsonianmag.com/arts-culture/the-glorious-history-of-handels-messiah-148168540/>

Holl, S. (n.d.). Ostrava Concert Hall. Steven Holl Architects. Retrieved May 10, 2023, from <https://www.stevenholl.com/project/ostrava-concert-hall-2/>

Kumar, I. (2019, February 19). Rhythm and Harmony of the Universe. Medium. <https://medium.com/@ianiket23/rhythm-and-harmony-of-the-universe-6efade419547>

Kwon, J. (2019, January 4). Frederick Kiesler. Medium. <https://jaeneenk.medium.com/frederick-kiesler-eb45b220e910>

Levi Price. (2020, April 9). The Temple of Music: A Mnemonic Device [Video]. YouTube. <https://www.youtube.com/watch?v=XWgvH6-3Cp4>

Logan, W. B. (1995). *Dirt: The ecstatic skin of the earth*. W. W. Norton & Company.

REFERENCE LIST (CONT.)

Nulty, A. (2019, October 17). In Pursuit of Endlessness: Frederick Kiesler and the Endless House. Nulty Lighting. Retrieved May 10, 2023, from <https://www.nultylighting.co.uk/blog/pursuit-endlessness-frederick-kiesler-endless-house/>

Pérez-Gómez, A. (2016). *Attunement: Architectural Meaning after the Crisis of Modern Science*. The MIT Press.

Pérez-Gómez, A. (Ed.). (2004). *Chora 7: Intervals in the Philosophy of Architecture*. McGill-Queen's University Press.

Pérez-Gómez, A. (2019). *Timely Meditations, vol.2: Architectural Philosophy and Hermeneutics (Selected Essays on Architecture)*. McGill-Queen's University Press.

Paz, Octavio. *Children of the Mire: Modern Poetry from Romanticism to the Avant-Garde, New and Enlarged Edition*. Cambridge, MA: Belknap Press, 1974.

Service, T. (2014, April 17). Handel's Messiah: a great work of charity that still resonates today. The Guardian. <https://www.theguardian.com/music/tomserviceblog/2014/apr/17/handel-messiah-charity-music-matters>

Smith, A. (2019, January 17). Herzog & de Meuron's 'Triangle Tower' receives planning. Architectural Review. <https://www.architectural-review.com/news/herzog-de-meurons-triangle-tower-receives-planning/10038575.article>

Spitzer, M. (2004). *Metaphor and Musical Thought*. University of Chicago Press.

The Miriam and Ira D. Wallach Division of Art, Prints and Photographs: Picture Collection, The New York Public Library. (1896). Theatre of Dionysius restored, Ephesus [Athens?] Retrieved from <https://digitalcollections.nypl.org/items/510d47e4-0f0f-a3d9-e040-e00a18064a99>

uDiscoverMusic. (n.d.). Handel's Messiah: History, Music & Lyrics. Retrieved May 10, 2023, from <https://www.udiscovermusic.com/classical-features/handel-messiah/>

White Cube. (2019). Anselm Kiefer: Walhalla. Retrieved May 11, 2023, from https://whitecube.com/exhibitions/exhibition/anselm_kiefer_bermondsey_2019

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Fall Instructor: Heather Fischer
Spring Instructor: Heather Fischer
Daylight Pavilion
Continual Delay Pavilion

2ND YEAR 2019-2020

Fall Instructor: Charlott Greub
Land Artist Studio - *Moorhead, MN*
Boathouse - *Minneapolis, MN*
Spring Instructor: Milt Yergens
Dwelling - *Cripple Creek, CO*
Klai Gardens Retirement Community - *Fargo, ND*

3RD YEAR 2020-2021

Fall Instructor: Paul Gleye
Congolese Cultural Center - *Fargo, ND*
Kilbourne Student Center - *Fargo, ND*
Spring Instructor: Cindy Urness
Prairie View Surgery Center - *Fargo, ND*
Dennis & Mary Kay Lanz Steel Design Competition -
Fargo, ND & Moorhead, MN

4TH YEAR 2021-2022

Fall Instructor: Mark Barnhouse
Triune Tower - *Miami, FL*
Spring Instructor: Kristi Hanson
Marvin Windows House - *Middle Cormorant Lake, MN*
Medora Masterplan - *Medora, ND*

5TH YEAR 2022-2023

Thesis Advisor: Stephen Wischer
Concertare: An Architectural Rediscovery of Spiritual
Harmony in a Secular World -
Dublin, Ireland; London, United Kingdom;
Boston, Massachusetts