

**/A CASE STUDY OF TADA O ANDO'S CHURCH OF THE LIGHT/
INTEGRATION AND REINTERPRETATION OF
OCCIDENTAL AND ORIENTAL SENSE OF LIGHT AND SHADOW
IN CONTEMPORARY ARCHITECTURE**

By

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ABSTRACT

This thesis explores reinterpretation and integration of occidental and oriental ideas of light and shadow in Ando's architecture.

The intention of the thesis is to identify Ando's interpretation of the manifestation of light and darkness in two seemingly contradictory spatial conceptions. Further, it explores the methodology through which Ando integrates his own interpretation of light and shadow, which evokes the sense and spirit of the ideologies of two cultures. Ando's own experience¹, through sense and spirit, ties the essence of the two cultures, and finally, geometry and materials become the devices to architecturalize diverse meanings, inherent in light and shadow.

The thesis unfolds into four criteria, through which Ando's methodology and intentions have been explored and articulated, beginning with an objective and factual analysis, which increasingly becomes subjective in nature.

Analysis reveals a conscious attempt to evoke essential attributes, which constitute traditional Japanese architecture, through a monochromic gradation of light and shade. In addition, through a forceful delineation of light in space, western ideals of introducing human will in architectural compositions renders space fraught with opposing forces of harmony and tension². Ando's sensibility

¹ Talking about his experience in a medieval monastery, Ando says, "... the interior was imbued with a feeling of great power. In the deep silence of the place, I was aware of something penetrating, something transcending the severity of religious precepts. And, in spite of differences between West and East, I sensed a connection between that something and the mood pervading a Japanese tea ceremony room". (Ando, 1995, P. 458)

² Ando's voices his ideas about tension created in the space as " I have lived as an architect to reach my own space of light, experiencing both the Japanese space that is uniquely characterized by shades and the Western space that is

does not attempt to resolve the contradictions. It allows the possibilities and freedom of confronting and questioning the meanings thus, generated.

Assiduous assimilation of cultural attributes, not in physical terms but in spirit and senses, endows Ando's architecture with profundity, which resists being consumed by the forces of standardization and universalization. In addition, in present circumstance, which is primarily driven by the logic of economic rationality and consumerism, Ando's stance gains significance for its resistance to consumption³.

rational and solid. It has been a continuous struggle, without an absolute answer, in order to realize two characteristics that sometimes contradict each other, without denying one to accept the other." (Ando, 1995, P. 139)

³ Frampton considers Ando's practice critical on the grounds that it has assumed a culturally oppositional stance to the instrumentality of megalopolitan development. (Ando, 1995, p. 488)

TABLE OF CONTENTS

| | |
|--|-----|
| ACKNOWLEDGEMENT | iii |
| CHAPTER 1 | |
| INTRODUCTION: | |
| Critical Contextualism | 1 |
| Bridging the Gap between Modernism and Traditions | 5 |
| Reclaiming Spiritual Domain in an Age of Consumerism cum Information | 8 |
| Cross-Cultural Criticism | 10 |
| Structure of Thesis | 12 |
| CHAPTER 2 | |
| IDEA OF LIGHT IN OCCIDENTAL SPACE | 15 |
| Christian Era | 18 |
| Pre-Christian Era | 23 |
| Idea of Dualism – light and dark as two contrapuntal notions | 34 |
| CHAPTER 3 a | |
| IDEA OF LIGHT IN TRADITIONAL JAPANESE SPACE | |
| Oku – Invisible Center | 37 |
| Darkness—An Expression of Oku | 39 |
| Initiation of Oku in Shintoism | 44 |
| Perception of Oku as Darkness in Traditional Japanese Spaces | 49 |
| Idea Of Emptiness-Embedded In the Concept of Oku and Darkness | 57 |
| CHAPTER 3 b | |
| IDEA OF LIGHT IN TRADITIONAL JAPANESE SPACE | |
| Perception of Emptiness— <i>Ma</i> | 61 |
| Space-Time Conception in Shintoism | 64 |
| Idea of Absolute Emptiness (<i>Sunyata</i>) In Buddhism | 67 |
| <i>En</i> Space and Twilight | 71 |
| Frontal Composition and Successive Observation | 76 |
| Perception of Phenomena of Light With Respect To Spatial Experience | 80 |
| Frontal Composition | 88 |

| | |
|--|-----|
| CHAPTER 5 | |
| CHURCH OF THE LIGHT | |
| Orientation and Geometry | 95 |
| Geometry of Form and Materials | 162 |
| Space and Shintai | 177 |
| Space and Time | 195 |
| | |
| CHAPTER 6 | |
| CONCLUSION | |
| The Cultural Essence of Oku and Sunyata | 221 |
| Integration of Occidental and Oriental Concepts of Light | 224 |
| Bridging the Gap between Modernism and Traditions | 226 |
| New Horizons in Ando's Architecture | 227 |
| | |
| REFERENCES | 229 |

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Priyanka Singh

INTRODUCTION

This thesis explores reinterpretation and integration of Occidental and Oriental expressions of light and darkness in Ando's architecture. The aspects of light and darkness have become instrumental in establishing cross-cultural criticism in Ando's architecture, through which he aspires to build in a global context.

Ando has founded his architecture on the grounds of traditional Japanese spaces. However, what makes his architecture worth inspiration and contemplation that he is not delivering anachronistic and nostalgic elements, based on borrowed vocabulary of traditions; rather his architecture perceives the gap between traditions and technological advancement and reveals a determined bid to invoke traditions and regional distinction through a universal modern language.

Critical Contextualism



The chaos in the Contemporary Japanese City, Plummer (1995), P. 264



Drew (1996), P.4

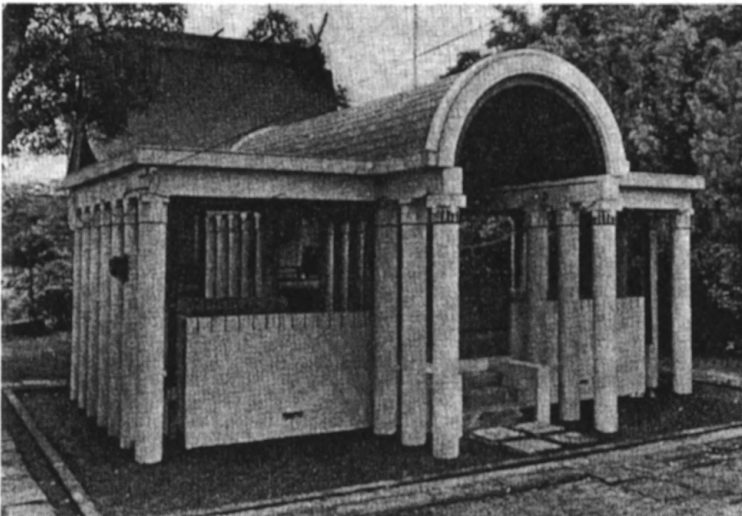
Ando established his architectural practice in 1969, in Osaka, his native city, and a megalopolis in Japan. One of the largest cities in Japan and industrial and commercial hub of the country, Osaka represents the true profile of Japanese cities, which are largely structured by three major influences of twentieth century, namely, universalization, consumerism/postmodernism and an increasing effect of media or information age.

Subjected to a prodigious growth after the Second World War, Japanese cities were invaded by European modernism in the form of industrialization and standardization. Standardization and mass-production pervaded and penetrated every segment of society. Judged on sole criteria of economy, traditional Japanese elements and cultural distinctions were completely discarded. Architecture followed the modernist and economist trend of the society. Complete change in Japanese lifestyle demanded corresponding transformations of construction techniques, building materials and spatial structures, which were better suited to a modern value system.

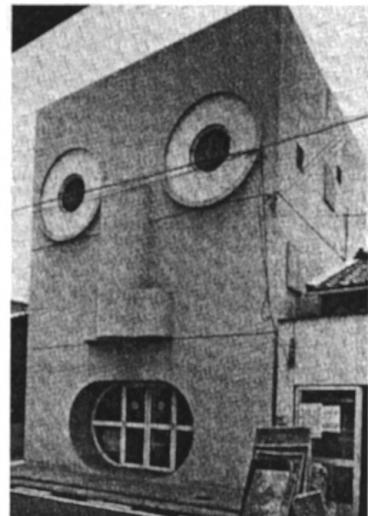
Traditional Japanese architecture, which was developed over a period of hundreds of years in accordance with the regional climate, landscape, topography, and religious faiths, was abruptly replaced by economical and pre-fabricated buildings. These buildings, which could have been installed and built regardless of regional characteristics, climate, landform, or topography, reduced Japanese cities to a no man's land. This phenomenon of universalization is described by Kenneth Frampton as one, which destroys the creative nucleus of cultures. In his words,

"The phenomenon of universalization, while being an advancement of mankind, at the same time constitutes a sort of subtle destruction, not only of traditional cultures, which might not be an irreparable wrong, but also of what I shall call for the time being the creative nucleus of great cultures, that nucleus on the basis of which we interpret life, what I shall call ... the ethical and mythical nucleus of mankind." (Frampton, 1992 P.16)

Economic boom of 1960's has further propelled contemporary Japanese cities on to an age of consumerism cum information. Vulgar display of commodities and ugly competition has rendered any notion of authentic dialogue in the city absurd. Architects have been branded and buildings have become commodities, dressed and designed in the most bizarre and unusual attire, in order to provoke and seduce customers. The more out of place a building is, higher are the chances of it being economically successful.



Juxtaposition of two cultural element
Kamimuta Matsuka Shrine, Bogнар, 1985, P.239



Pop House, Kyoto
Bogнар 1985, P.242

In addition, economic viability requires land to be occupied by the most profitable construction. This demands a continuous renewal of urban fabric based on current trend, rendering city context ephemeral and transient. Advent

of postmodernism and consumerism not only constitute visually saturated, transient and chaotic city environment, they have also reduced status of architecture as a commodity, which is marketed either by exploiting nostalgic expressions of the past or by luring customers through transient pleasures of visual sensations.



The Electronic City, Namba, Osaka,
Plummer, P.264



Shibuya Square, Tokyo
Bognar, 1990, P.10

Recent developments in electronics and media, which are the gifts of information age, have challenged the reality of the city image. Reality of architecture is replaced by virtual reality of signs and images. Environment has become predominantly an architecture of signs over space. Urban realm is fragmented into individual value systems and signs have penetrated the most intimate of spaces. Hajime Yatsuka aptly describes the response of architects, giving in to an environment plagued by sensory chaos, visual saturation and transient pleasures as,

"For Japanese architects design became limited to individual buildings, "as show pieces", with a metaphorically and metonymically transformed and often fragmentary imagery, unlike the longing for a collective ideal society". (Yatsuka, 1981, P.3)

Given this city context of juxtaposition of conflicting syntax, transient city fabric and sudden influx of universalization after the Second World War, Ando assumes a critical stance to establish human zone within this alienating and anonymous environment of the city. Ando's response to the fragmentary urban realm and multiple realities of the city is one of grounding his architecture in the reality of everyday life, authentic materials, and natural elements. Ando's intentions and the conditions in which he is subjected to work is concisely stated by him,

"... since the circumstances in which we work are absurd and since we can only vaguely understand our own existence, we hope to infuse architecture with a sense of the actual by coming into contact with the deepest aspects of human nature." (Ando, 1977, P.73)

Bridging the gap between modernism and traditions

Ando could sense the gap created by sudden influx of modernism into traditional Japanese way of life, which uprooted cultural distinctions formulated after a long process of struggle and compromise with the regional conditions. Foremost contribution of Ando to the society is identifying and acknowledging the existence of the psychological gap between the two ways of life. He states his observations and intentions in the following quote,

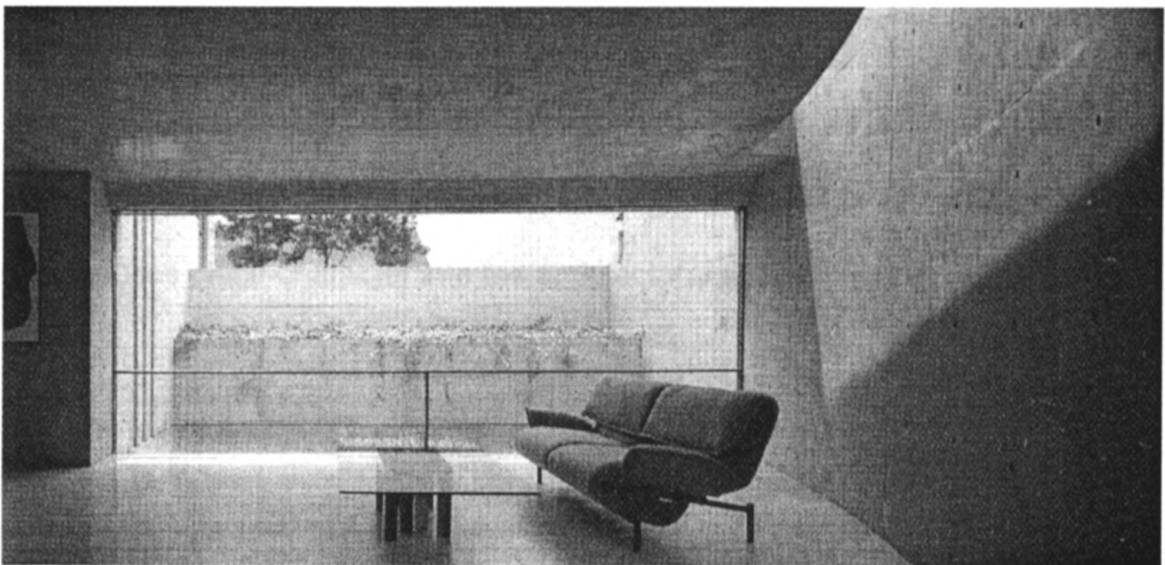
"As an architect in the island country of Japan – where the traditional and the modern have merged with absolutely no continuity – I have conversely fought desperately in order to be able to

fulfill the social demands of contemporary times while at the same preserving a continuity with the past or with the cultural climate and traditional environment of each region". (Blaser, 2001,P.7)

His architecture directly addresses the paradox, which is stated by Ricouer,

"How to be modern and return to sources". (Frampton, 1992, P.16)

Within a vocabulary descending directly from the modern linguistics, Ando is consistently striving to preserve the most essential of Japanese traditions; the process, which he calls "*from self—enclosed modern architecture towards universality*" (Ando, 1982, P.8). Ando interprets through his observations that an architectural space integrated with nature is the most characteristic of Japanese architecture, which has been lost in pursuit of modernism. He states following observations, "Overly dense urban and suburban populations made it impossible to preserve a feature that was formerly most characteristic of Japanese residential architecture: intimate connection with nature and openness to the natural world. What I refer to as enclosed Modern Architecture is a restoration of the unity between house and nature that Japanese houses have lost in the process of modernization." (Ando, 1995, P.446)



Introducing light within space as an element of nature, Kidosaki House
Ando, 1995, P.203

Nature, rendered fragmented and rare in the existing context of urban realm, Ando, in his determination to reestablish connection with nature, has resorted to the abstract form of nature in the form of light. Not only does light become an element to revoke a long lost tradition of reintegration with nature, it also engenders regional characteristic, referring to Genus Loci of the place, set against a homogenized culture. Natural light has been a predominant force in Ando's spaces in reclaiming long lost characteristic of Japanese traditional spaces.

However, Ando does not introduce light in its rawness¹. He calls it an abstract nature, a man-made nature, which is manipulated such that multiple layers of meaning are manifested in its abstract form². Ando articulates and manipulates natural light in order to evoke an essence of Japanese sensibilities and ideologies, which have been the foundation of Japanese culture. This thesis in part, examines Ando's reinterpretations and methodologies in reestablishing the roots of Japanese traditions through expressions of light and shadow within a framework of modern linguistics.

Ando's approach to architecture sets him apart from his contemporaries in this aspect that through intangible elements such as light and shadow, he not only induces place-character into the architectural spaces but also infuses the

¹Ando states his ideas about natural elements, which are introduced into architectural spaces, " I do not mean nature in the raw but instead a man-made nature. Chaotic nature that has been given order by man, or order abstracted from nature. It is light, sky and water made abstract". (Ando, 2001, P. 17)

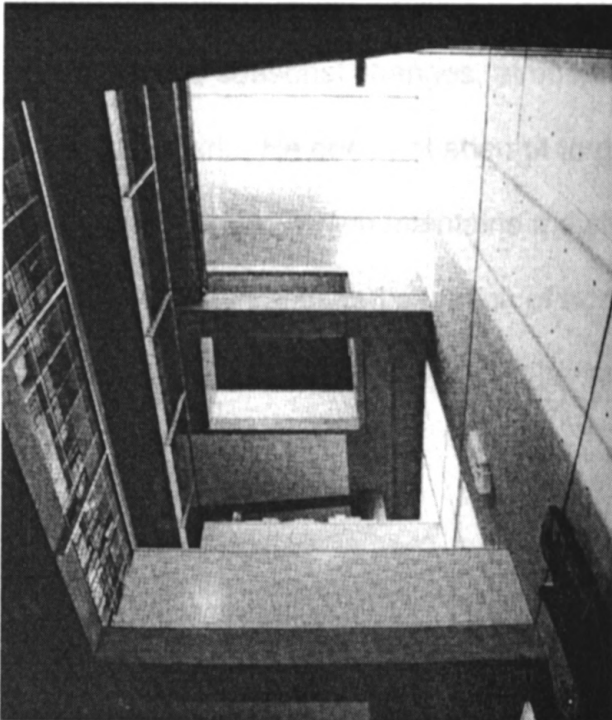
²William J. R. Curtis observes, "For Ando, abstraction is above all a means of distillation—a device for concentrating levels of meaning and for bringing ideas alive in form, space, and material. (Ando, 2001, P. 17)

cultural and historical distinction while not succumbing to consumerist practices disguised as post modernism.

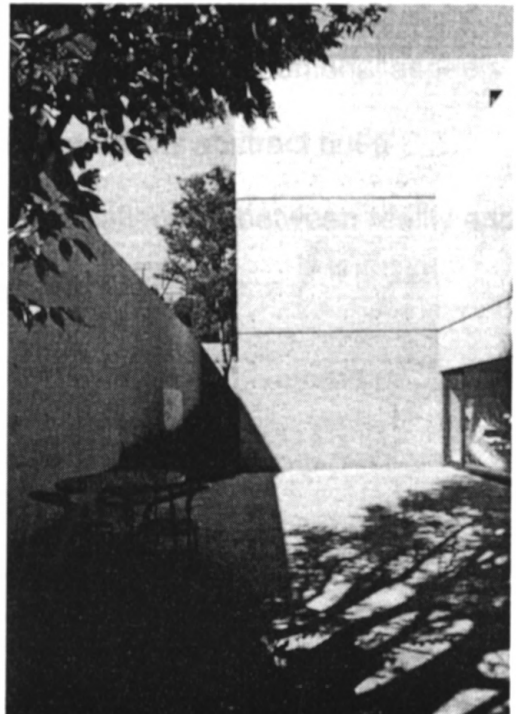
Reclaiming a Spiritual domain in an age of Consumerism cum Information

Set against contemporary consumerist society, Ando's architecture reveals a disposition towards denial of urban context, which nevertheless is highly heterogeneous and ephemeral, if at all present. He states his intentions and aspirations, which reveals his determination to generate prototypical space in a world infiltrated by forces of consumerism and unreality,

"I believe that, however anachronistic it may sound, it is important to ask the fundamental question, "What is architecture?" The creation of architecture must surely be a criticism of today's problems. It must resist existing conditions. And it is only when one squarely faces up to today's problems that one can really begin to deal with architecture." (Ando, 1995, P.450)



Denying city context and illustrating nature within empty spaces, Atelier, Oyodo, (Ando, 1995, P.374)



Yoshida House, (Ando, 1995, P.370)

His naked spaces, expunged of frivolous features speak of nothing but emptiness, which, however, manifests a living phenomena predicated on an interaction and manipulation of light in spaces. His intentions relate directly to the spirit and render all material entity minimal and meaningless. Nature, in the form of light, endows architecture with an enduring presence of context, which has been long lost and negated in the continuous renewal of urban fabric in a race towards latest trends, without imparting any thought to the city as a whole.

In a similar fashion, Ando grounds his architecture in reality of substantial existential meanings, which have been reduced to signs and icons in the virtual reality of city, which keeps churning out more signs, ultimately distancing and emptying signs of any significance. Within this city context—inundated with signs—isolating and absorbing light into an architectural space, Ando attempts to ground his spaces within realities of everyday life, which is marked by cycles of day and night, seasonal changes, atmospheric fluxes, and phenomenal aspects of light and dark. He does not attempt to generate spatial abstract but a prototypical space³, which maintains a dialogical relationship between reality and Shintai (which is translated as union of body and mind).

³Ando states his intentions, "I am not attempting to produce spatial abstractions, but spatial prototypes. My spaces are the emotional expression of various people rather than an intellectual operation. I wish to create prototypes because I wish to make my work into a long investigation, which is continuously developing." (Ando,1995, P.444)

Cross-Cultural Criticism

It is observed from the above discussion that light becomes a significant element in Ando's architecture through which he attempts to address the context of contemporary city, which is primarily structured by forces of universalization, consumerism, and simulation. However, Ando not only builds in reference to the immediate surroundings of his city, he, at the same time, seems aware of the significance of building in a global context in the contemporary world.

An autodidact, Ando has acquired his architectural education through actual experience of spaces. Born and bred in Kansai region, Ando is unconsciously exposed to the deep Japanese culture, in the form of farmhouses, minka, teahouses, and streets. Though new buildings and urban form had enveloped the city throughout, remnants of past still layered upon such a fabric.

Denying theoretical knowledge of books, he relied on a complete sensory experience, which he calls *Shintai*⁴, a union of body and spirit. Ando toured the West in his pursuit of architectural spaces of West. His vivid description of light in the west and the east reveals his fascination with light as an element of cultural distinction,

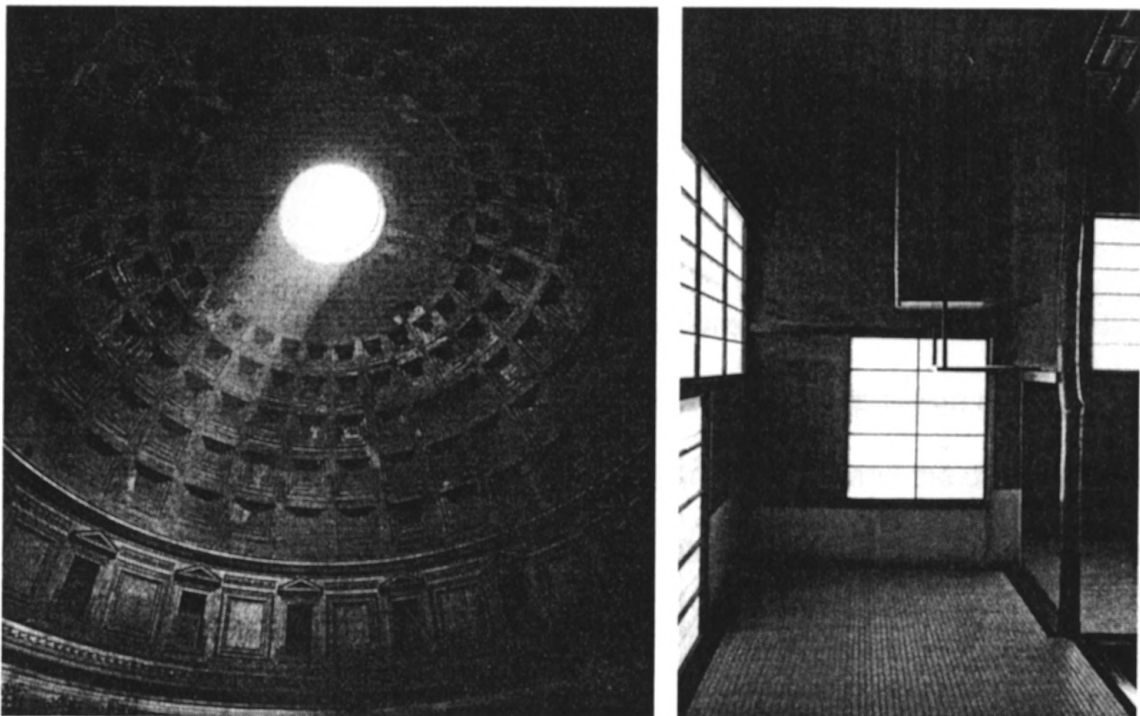
" The light filtering through high windows into farmhouses in the snowy north or sharp contrasts of light and shade in the streets of medieval Italian city states, when projected into modern spaces, reveal to me richly real, unadorned relations between architectural space and people."

⁴ Interpreting his own understanding of the word *Shintai*, Ando states, "*Shintai* is ordinarily translated as 'body', but in my use of the word I do not intend to make a clear distinction between mind and body; by *Shintai* I mean a union of spirit and flesh. It acknowledges the world and at the same time acknowledges the self". (Ando, 1995, P.453)

In his spaces, expressions of light and shadow representing the cultures of east and west are apparently integrated, which he defines as a distinct quality of Japanese cultural structure. Nevertheless, simultaneously he warns of complete elimination of what is distinct to Japan through indiscriminate and unrestricted acceptance of western culture. In his words,

"The combination of East and West within me is an accurate illustration of the Japanese cultural structure. Japan has created a distinctive culture by importing and assimilating elements from other countries. Today, however, there is a tendency to submerge our distinctiveness so that much that is particular to the Japanese is being lost. I believe that the time has come for us, while continuing cultural overlapping with the West, to reevaluate our own indigenous tradition."

(Ando, 1995, P.458)



Light in western space and Light in traditional Japanese space
Pantheon (left) Isozaki, 1991, P.56, Traditional Japanese Space (right), Isozaki, 1991, P.59

It precisely describes Ando's approach to the notions of light and shadow in his spaces that while being receptive of western ideas, he grounds his

architecture in Japanese cultural essence and while not losing the fundamental conception of traditions, he allows western ideas of light to infiltrate in. This critical approach to design allows an expansion of context from regional to global, while retaining the essential rooting of cultural distinction.

This outlines the intention of the thesis, which seeks to explore the integration and reinterpretations of Occidental and Oriental ideas of light and shadow in Ando's architecture. Case study analysis primarily concentrates on the methodology employed by Ando in achieving such a critical and precise balance of cultural combination. Nevertheless, at the same time, intentions of the architect have been identified by analyzing the resultant space, which has been achieved through controlled interpenetration and articulation of light and shadow in the interiors.

Structure of Thesis

Thesis is broadly structured into two sections, in which first section consists of a brief background of the intentions behind manipulation and expressions of light in Occidental and Oriental architecture and the other section analyzes case study building, in which Ando's attempt to reinterpret and integrate the Occidental and Oriental intentions and expressions of light and shadow has been explored.

In the first section, the key concepts of Occidental and Oriental architecture, which have significantly influenced and contributed to articulate phenomena of light and darkness, have been discussed. In occidental

architecture concepts of *center* and *path* have been identified as prime intentions, which have conceptualized the articulation of light and shadow. While, in oriental architecture, concepts of *Oku*, *MA* and *sunyata*, are the prime modes, which have contributed to configure meanings manifested and communicated through elements of light and darkness. This background of two cultures is followed by the analysis of case study building, "Church of the Light".

"Church of the Light" is designed by Tadao Ando, in which sacred and religious nature of the building is expressed through light as an "ultimate theme"⁵. Analysis of the case study is structured into four segments in which first two segments deal with factual observations of orientation, geometry and materials, which have been positioned and articulated with respect to the sun's movement, seasonal changes, and atmospheric flux. Manipulation of light through syntax of orientation, geometry, and materials is analyzed through computer generated 3-d drawings, analytical sketches and photographic images.

The last two segments are subjective in interpretation, since they consider spatial and temporal interpretations through human movement and observation. Analytical drawings and computer generated 3-d drawings have been used to study this part of the analysis.

⁵ Ando states his conception behind the sacred spaces in the Church of the Light, "... I have thought about sacred space. The question I asked myself was what is sacred space to me. In the West, a sacred space is transcendental. However, I believe that a sacred space must be related in some way to nature. ... For me the nature that a sacred space must relate to is a man-made nature, or rather an architecturalized nature. I believe that when greenery, water, light or wind is abstracted from nature-as-is according to man's will, it approaches the sacred. The Church of the Light, ..., represents an effort to architecturalize or abstract in the above sense the natural element of light". (Ando, 1995, P.455)

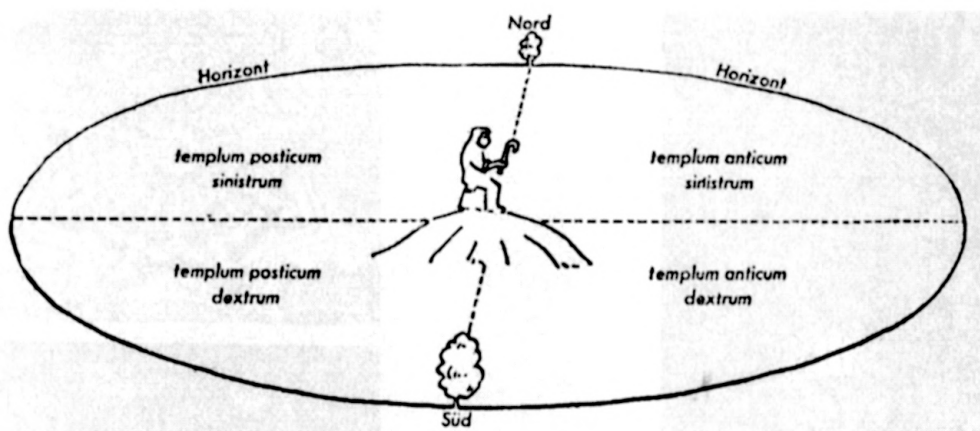
Conclusions have been drawn based on the above analysis interpreted against the background, which identifies the characteristics and expressions of light in two different cultures.

Following the above sequence of the thesis, next chapter begins with the intentions and key concepts in occidental culture, such as center and path, which have largely contributed towards generating distinct spatial construct and metaphorical meanings through manipulation and articulation of elements of light and shadow in.

IDEA OF LIGHT IN OCCIDENTAL SPACE

Occidental intentions of space follow from their cultural perception of natural phenomena and cosmogony⁶. In ancient times, natural forces were considered chaotic and non-benevolent for human existence and sustenance. In line with this understanding, it was considered essential that human world be separated from the surrounding chaos of the nature. The idea of walled cities is a direct consequence of a similar understanding, which allows a better control over environment.

In contrast with natural forces, cosmic order was believed to be perfect, which was presented as an ideal to be adopted by humans. Along these lines, geometry and mathematics, which were considered to be directly descending from the cosmogonic order of perfection, were believed to be sacred. Spatial constructs based on geometrical principles were considered direct representations of cosmic order on earth.



**Roman ideology based on geometry and cosmic representation, man in the center of universe
Norberg-Schulz, p. 86**

⁶ Isozaki observes, "Man's fundamental key for the perception of space has been interpretation of visible nature, and the manner in which this interpretation has been made has depended largely on the various views of nature and the cosmos that have prevailed in various periods of human history. (Isozaki, 1979, P.70)

Within this context, two points of development followed through western consciousness – one is horizontal seclusion of human habitation from chaotic environment of the nature, through which westerners delineated a territory for themselves within surrounding chaos in order to wedge spiritual microcosm signifying human will and dominance.

The other development is inclusion of cosmos through a vertical reference, such as soaring spire of Church or introduction of light (penetrating from above) in the interior space. Manifestation of axis mundi, which represents the cosmic pivot connecting profane world of humans with the higher cosmic plane, communicates the idea of man's position in the greater realm of existence. Cosmic pivot becomes the point of focus, to which the entire spatial composition is directed. This indicates composition of center and path⁷, in which center is manifested as the point of vertical reference to which all the spaces lead generating directed pathways.



Walled city, Palma Nova
View of an Ideal City, Norberg-Schulz, 1975, P.228



Center and path, Cathedral Salisbury,
Norberg-Schulz, 1975, P209

⁷ Maki in his essay, "Japanese spaces and the concept of Oku", states his observation about ancient European towns, "In ancient times the city was regarded as an orderly cosmos set apart from the chaos surrounding it. The church spire, as a cosmic pillar was the center and the symbol of the city and assured communication with heaven. (Maki, 1979, P. 58)

The themes of Christian spaces were in complete compliance with the ideas of Center and path. Predominant examples of such conceptions can be still observed in ancient European cities, which were constructed by first establishing the center, such as a centrally located Church; which is intentionally made open and visibly loud and the encircling wall, which delineates the territory for which center has been marked. In this approach, geometry becomes a sacred instrument for western spatial compositions to proclaim a dominant and symbolic presentation of center; signifying the center of the universe.

In the interiors of western spatial constructs, in order to manifest such symbolic spaces, interaction of light and geometry became instrumental. Geometrical spaces delineated true centralized spaces, which manifested axis mundi through vertical reference of light pouring down from the heaven. Mediating between cosmos and earth by establishing vertical reference, light acts as a confirmation to the idea of absolute belief in the existence of heaven above in the form of Cosmos.



Interior with axis mundi delineated through light
S. Costanza, Rome
Norberg-Schulz, 1975,
P.133

The history of western architecture, based on our subject of interest, can be broadly structured into two categories—Pre-Christian era and Christian era⁸. Christian spaces were based on the idea of spiritualism and symbolism established as the foundation of religious beliefs, in which light signified metaphorical representation of divinity. We will first consider Christian era for our discussion and explore concepts of spaces and light, which were determined and structured within the framework of Christianity.

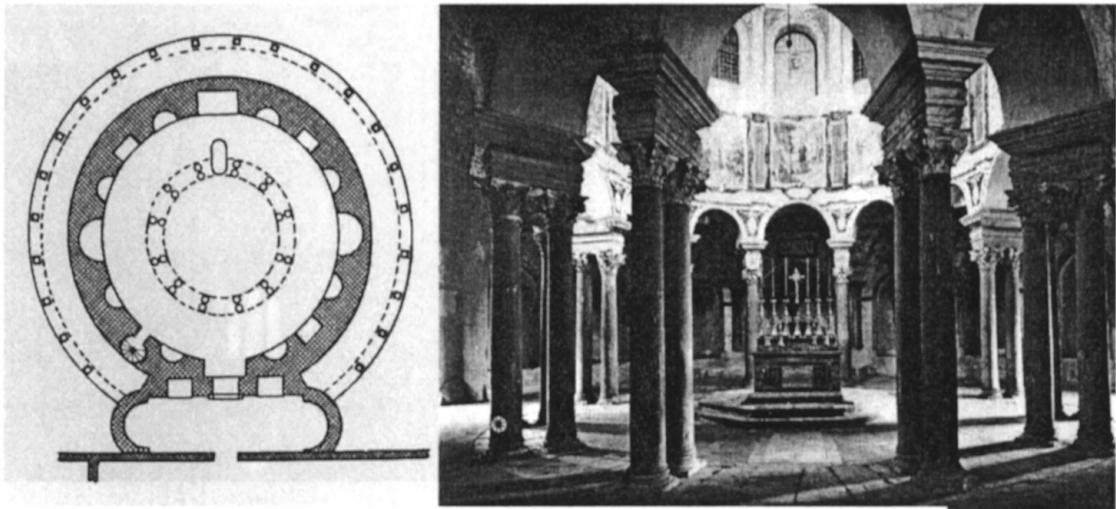
Christian Era

In Christianity, Christ is symbolized as light. The idea of light versus darkness is manifested in which Christ reveals himself as light. The interior of the Church spaces follow these principles in order to manifest the symbolism depicted in light. Altar is illuminated by light falling from above, which signifies the presence of divinity. Hence, in Christian spaces, light becomes a symbol, which confirms and communicates the idea of existential meanings and religious beliefs.

In early Christian churches, idea of Christ symbolized in the form of light became center of the interior space. Spatial composition is directed towards the center, where center is illuminated with divine light pouring from above. In this reference, the center is manifested as a cosmic pivot, which becomes the vertical

⁸ Norberg-Schulz, in his chronological analysis of *Meaning in Western Architecture*, mentions the notion of Christian era during which conception of spaces achieve a new dimension of thoughts. The subdivision into Pre-Christian era and Christian era adopted here has been inspired by his discussion; nevertheless it has been conceptualized for this discussion only for the purpose of simplification of the structure and understanding.

axis tethering heaven and earth. This idea is engendered and communicated in the form of heavenly light, which seems to form a vertical referential axis to heaven.



Centralized Spatial Structure, S.Costanza, Rome, Norberg-Schulz, 1975, P.131

Later constructions of Churches became longitudinal in cross-sections, eliminating centralized spatial structure of early Christian era. However, the emphasis on center in the interior remained the same, with a significant introduction of the concept of path. The notion of path in longitudinal cross-sections of churches symbolizes the idea of journey towards God in the form of light in the center of the spatial composition. In the longitudinal spatial composition, central nave is lit from above signifying the directed way to the communion with Christ, and the aisles remain semi—dark, indicating the superiority of the central nave. The whole structure seems to have been conceptualized in order to engender a particular sensation of light and dark, which inspires towards existential meanings identified and established in western culture.



Longitudinal Spatial Structure
Cathedral Salisbury, Norberg-Schulz, 1975, P.209



Cathedral, Prague, Norberg-Schulz, 1975, P.201

However, in a longitudinal spatial composition, spiritual manifestation of center and architectural center occur at two different nodes in space. Altar, signifying the spiritual center lies at an extreme end of the Church, while dome—the architectural center, which signifies axis mundi, lies in between the path towards the altar. Here, the idea of center manifests itself as an abstract notion⁹, which indicates divine presence of Christ in the form of light within the minds of observer. Perception of center no longer remains a concrete and tangible phenomena; rather it is established as an abstract notion, of which observer is made aware through syntax of light and geometry.

⁹ Interpreting Center in Christian spaces, Norberg-Schulz observes, "Only by developing his own inner self can man find true existential meaning, and that development meant to follow Christ. The center of the Christian world, therefore, is something more than a concrete natural or man-made place. It is the abstract point where the meaning of life is revealed. (Norberg-Schulz, 1975, P.145)

Having organized the internal spaces of the church according to the cosmic principles and religious beliefs, the entire composition of the church, including the external and internal spatial system, is integrated into the greater realm of cosmic system through an east-west orientation, which represents the eternal path of the sun along the sky, symbolizing the reflection of microcosm on earth. East-west orientation illustrates direct representation of a cosmic order traced and manifested in the form of longitudinal axis of the church.

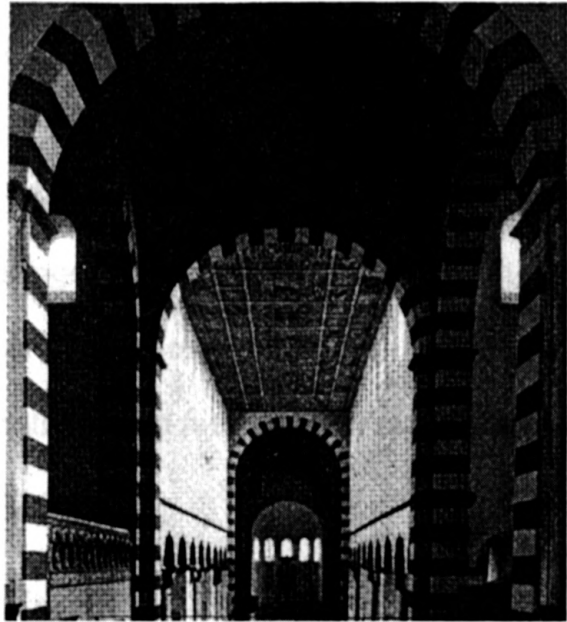
Besides symbolic configuration of the spaces based on the principles of cosmic laws and geometry, another phenomenon, which developed during Christian era, is an attempt to dematerialize walls and construct an ethereal world reminiscent of heaven. In early churches also, attempt to create heavenly presence through manipulation of light is observed. Believer, who enters the church interior, experiences an extraordinary space, which is completely different from ordinary world of human beings. Norberg-Schulz observes the manifestation of heavenly world in early Christian churches through various manipulations of light and materials, such as S. Paolo fuori le Mura, of which he speaks,

"The arcade makes the wall appear as one continuous (although perforated) surface, without the traditional conflict between vertical and horizontal members. The wall hence is "dematerialized," an effect which was emphasized by its treatment as a flat surface. Arched windows lit the nave and the transept, whereas the aisles remained dark. With the introduction of glass mosaic the walls were transformed into a shimmering skin: Thousands of minute tesserae were pressed into the plaster at slightly different angles to make the mass of the wall dissolve in a play of coloured lights. Space in the interior of the Early Christian church was intended to make the visitor forget

the properties of everyday things: plastic form, weight, size, scale, material texture, and shape defining shadows. (Norberg-Schulz, 1975,P. 127)



Ste. Chapelle, Paris, Gothic interior
Norberg-Schulz, 1975, P.219



St. Michael, Hildesheim
Norberg-Schulz, 1975, P.157

Light has always been symbol of spiritualism in Christian spaces and a factor in determining the character of Christian spaces through an interaction of light and material substance. In Gothic architecture, ideals of light reached highest embodiment of spiritual pursuit of Christian spaces. Massive surrounding walls of the Church became diaphanous and translucent. Walls, themselves, became embodiment of light, while the surface of the material substance was layered with an ethereal glow. Gothic cathedrals broke free from the material limitations to create space. Light and space became one.

Symbolizing the presence of divinity through syntax of light, geometry and materials, meaningful experience is evoked in the minds of believer, who becomes closer to God and feels one with the cosmic world. The experience not

only gives identity to the man's sense of existence and seeking but also orientates his position in cosmos.

Metaphorical representation of light is not only manifested and communicated in Christian era; in pre-Christian era also, light has been manipulated through certain techniques of geometry and spatial structures, which communicate cultural and religious meanings to the observer. Next section explores the intentions and ideas prevalent in the pre-Christian era, which led to the conception of meaningful spatial constructs and metaphorical representations through the phenomena of light and darkness.

Pre-Christian Era

Pre-Christian era, is the period before the advent of Christianity and therefore, is unaffected by the spiritual ideals of Christianity, which have manifested in Christian churches as concepts of Center and Path and symbolic representation of Christ in the form of light.

Pre-Christian civilizations¹⁰ – Roman, Greek and Egyptian cultures derived and established their own interpretations of the cosmogonic sciences and religious beliefs. However, the idea of Center has constantly been a strong force in design considerations and spatial structures in Pre-Christian era.

¹⁰ In the following discussion of Pre-Christian era, Egyptian and Roman cultures have been selected as representative of period before Christianity. This selection is based on the fact that Egyptian culture is considered the earliest known western cultures, which gives an insight on the original intentions during early periods. While Roman architecture is considered first culture to be spatially oriented and directed architectural expressions towards profound interiority.

EGYPTIAN CULTURE



Gilt top generating vertical axis, Pyramid, Egypt

Earliest instance of manifesting light as a symbol of center and divinity can be cited in Egyptian architecture, which was based on the principles of Order and stability (Orthogonal structures). Monumentalism and stable structures of Egyptian architecture such as Pyramids projected the notion of eternity. Pyramids not only constructed the religious and existential beliefs of early Egyptians, they also communicated the belief in the idea of eternal life and existence. Religious beliefs of early Egyptians revolved completely around the conception of the sun as God RA. The tip of the pyramid was gilded in gold in order to receive the sun at its pointed top. The sun God was believed to reside in

monolithic pyramidions with gilt top. Gilt top of the pyramids and obelisks¹¹, manifesting the vertical reference, established and communicated the idea of cosmic pivot, which signifies the medium of communication between earth and heaven.

In addition, Idea of center is projected through manifestation of vertical reference, in the form of gilt top of the pyramids, which represents the presence of divinity (the sun God). Idea of stability and axis mundi, which becomes the transcription of Egyptian mode of understanding cosmos and their position in it, alludes to the same idea, which emerged during Christianity, of Center and Path.



Pylon depicting gateway of rising the sun, Edfu, (Norberg-Schulz, 1975, P.40)

¹¹ ¹¹ Norberg-Schulz discovered that the architectural constructions were direct results of religious faiths and interpretations of which one of the examples is an obelisk. He observes, "Atum (God of Creation) first appeared as a rock which rose out of the primordial waters to receive the rays of the sun on its pointed top. This rock was represented in Heliopolis (the sun city) as a menhir, the so-called benben stone, which prefigured the later obelisks. (Norberg-Schulz, 1975, P.41)

Several other constructions such as pylons, obelisks, and menhirs demonstrate similar compositions of acknowledging and receiving the sun. Obelisks and menhirs are constructions, which have been designed to receive the first rays of the sun on their pointed tops. Pylons, through which rising the sun can be observed, signify the idea of gateway, interpretation of eternal path leading to divinity. Norberg-Schulz points out the significance of pylons with respect to representation of the cosmos,

"As an axially organized and orthogonally structured oasis, it [temple] was obviously intended as a direct representation of the Egyptian cosmos. This becomes still more evident in an examination of its [temple's] monumental gateway-the pylon. The pylon consists of two massive towers with inclined walls, united by a tall door. Over this door, between the towers, is a representation of the sun. The relationship with the hieroglyph for world is evident. As the temples were generally oriented towards the east, the rising the sun was seen from the inside between the two halves of the pylon, and the door became the "gate of heaven" through which emerged the shining the sun-god and his representative, the Pharaoh." (Norberg-Schulz, 1975, P.14)

It is implied through such examples that prime idea of construction in Egyptian Architecture being one of acknowledging and recognizing the necessity and domination of the sun's energy. From above discussion, it can be assumed that the sun, in the form of light has been symbolic of spiritual faith throughout Egyptian architecture. The idea of belief in eternity was established and solidified through adoration of the sun, which was symbolized as divine force. Three intentions – axis mundi, eternal path and eternal existence – of the spatial constructs can be identified in Egyptian architecture, which have been

manifested and communicated through an interaction of light and exterior composition of monolithic forms.

ROMAN CULTURE

Romans conceived their spatial organization strictly based on their interpretations of cosmos and rules of geometry, which was believed to be sacred in terms of manifesting the ideal order of cosmos. Roman spatial conception was truly based on cosmic order of “spiritual” vertical and “horizontal” profane.

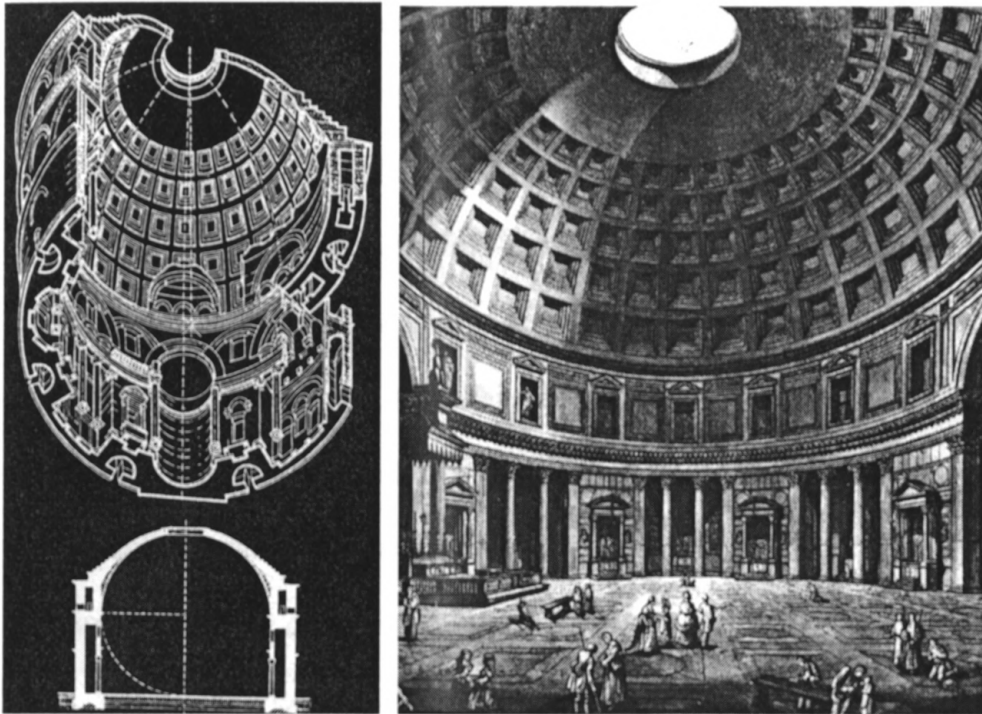
Romans strived to discover the meaning of cosmic interpretations and human existence through their own understanding of nature and cosmic phenomena. Nevertheless, they did not deviate much from the earlier conceptions formulated by Egyptians in the form of belief in eternity. However, their approach became more scientific, intellectual, and rigorous. Western approach, in general, has been a consistent struggle to abstract cosmological order conceived and derived through intellectual observations and calculations. It can be safely affirmed that development of western space corresponds to the development in mathematics and sciences fields in any particular era. Similarly, Roman spatial constructs evolved out of a **process of intellectualization** over the cosmogonic sciences and phenomena. They believed in absolute idea of space, which symbolized their belief in the existence of absolute cosmos. They considered geometry to be directly descending from the principles of cosmogonic

sciences. Hence, application of geometry was considered sacred for spatial constructions and experiences.

Compared to the manifestation of meanings through the exterior forms in Egyptian architecture, Roman architecture pursued communication of meanings through constructions of profound interior spaces in which spatial compositions turn inwards. Roman culture is considered spatial and dynamic in nature, rather than being sculptural and static compared to Egyptian and Greek architecture. The interior of structures was built in full harmony with the ideal of conceptualizing absolute presence of space. Idea of axis mundi, established through light pouring from above, became an essential element in communicating the established relationship between man and God. A concrete and meaningful position of man was identified in the cosmos through profound interiority of the space. Cosmic pivot in the form of light pouring from the top in the interior space not only constituted a vertical reference axis, but also manifested the idea of center around which the whole space revolved.

Architectural masterpiece of Roman era, Pantheon presents a fine example for us to consider as a case study along above lines. Pantheon is a Roman temple based on geometrical configuration of a circular plan. Walls, which go upwards, form a cylindrical space. A hemi-spherical dome covers the cylinder, composing an imaginative sphere in the interior space of 43.2 meters diameter. Interior of Pantheon is completely symmetric, which is pivoted to the

central vertical axis from the center of the base of the cylinder to the top of the dome¹².



Pantheon, depicting geometry, cosmic reference with respect to man's position
Norberg-Schulz, 1975, P. 102

Having discussed the spatial composition of Pantheon, we will observe the behavior of light in the space. An oculus of around 8 meters in diameter is inscribed in the center of the dome. Axis mundi, which is already determined by the configuration of the rotunda, is accentuated by the presence of the oculus. Drama is exercised, when shaft of light penetrates the space from the oculus down in the interior. Interior does not contain opening other than one on the top,

¹² Norberg-Schulz observes, " the coffers of the dome are not related to the center of the sphere (imaginative sphere), but to the center of the floor and to the spectator who would stand there. A vertical axis thereby defined, which rises freely towards heaven through the large opening in zenith, means that the Pantheon integrates the sacred dimension of the vertical in the organization of interior space." (Norberg-Schulz, 1975, P.101)

thereby creating a relatively dark space, which is almost miraculously eliminated by the heavenly light pouring down. The shaft of light follows the movement of the sun along vaulted path of sky and records the idea of eternity reflected in the cosmic event. Shaft of light behaves like a huge the sundial constantly shifting on to successive coffers of the dome.

The spatial composition of Pantheon informs of a highly geometrical and intellectual order of understanding of cosmic phenomena, which has been attempted to translate into an architectural language. The idea of integrating vertical dimension with the horizontal realm of human world has been fantastically composed through geometrical configuration of cylinder and dome, creating a perfectly centralized space.

However, it is the introduction of light in the space, which manifests the idea of divinity inside the temple space. Drama is created through confrontation of two contrapuntal notions of light and dark in a singular volume. A clear victory of divine light over darkness brings an ordinary man closer to God and solidifies his faith in a greater power, which gives identity and meaning to his life. In addition, axis mundi reinforced through shaft of heavenly light establishes the idea of integration of sacred world (heaven) with the horizontal realm of profane world (earth). In the interior spaces, image of light signifies an extension of the cosmic interference through which light does not remain fragmented in space, but establishes symbolic expression of entire cosmos. An image of the sundial recorded on the interior surface of the dome through continuous alteration of

shaft of light corresponding to the sun's vaulted path in the sky, brings eternal order of cosmos into the immediate grasp of human world.

Within this context, probably it can be believed that the whole material construction is only to manipulate light in a certain way, which will firmly establish the idea of center and cosmic pivot in the minds of observer.



Projection of light into interior,
Pantheon, Rome, Isozaki, 1991,
P.102

Penetration of light from the oculus within the interior space of Pantheon signifies the connotation of eternal presence of divinity. Interior of Pantheon, through an integration of geometry and light, creates sacred environment, which conceptually and fundamentally differs from the outside profane world.

Romans, besides composing the idea of cosmic pivot and eternal order of cosmos in an interior space, also transcribed them on street patterns. In Roman cities, two main streets intersect each other at right angles and divide a

rectangular or square area into four parts. Established by augers, these two main streets are called *cardo-decumanus*—*cardo* is primary, while *decumanus* is secondary. *Cardo* runs in north-south direction signifying the axis of the city in compliance with the world of Gods and *Decumanus* suggests the course of the sun from east to west, symbolizing the eternal movement of the sun and an integration of cosmic order with the human world. In this situation, the sun is considered dominant force, which becomes representative symbol for the entire cosmic world.

It can be concluded through a chronological consideration of pre-Christian era and Christian era that consciousness, in which the sun was symbolized as a divine object in pre-Christian era shifted to the recognition of divinity in light, an intangible aspect of the sun. Recognition and representation of the sun as God is observed in Egyptian culture as Pyramids, obelisks, stone henge, menhirs, pylons, and so on. The process continued in Greek and Roman civilizations, where the sun represented image of God. During Roman civilization, instances may be identified in which cosmic light is introduced inside the space through which man's connection to the realm of existence has been established. Nevertheless, it was the inception of Christianity, which unfolded a new chapter in western spaces, introducing a fundamental change of identifying God with light.

Manifestations of light in western spaces evolved into such extraordinary techniques of spatial compositions that entire western history demonstrates

consistent efforts to realize the ideal conditions and mechanisms of introducing light into space in increasingly influential and effective manner¹³.

Three intentions achieved through light can be identified from the above discussion, which are represented in western spatial experiences through an interaction of light, materials, geometry and the syntax of spatial construct.

One is that light represents **symbol** of divinity. Spatial construct, through which light is depicted as vertical axis suggesting an immediate presence of God, represents the idea of divinity. Through an interaction of light and dark, confined space of Church opens up into vertical dimension of heaven and horizontal dimension of the human world. In Gothic cathedral, through dematerialization of wall surface, space itself is transformed into light, manifesting an ideal state of Christianity, which establishes presence of God in the immediate surrounding.

Secondly, according to western interpretations of cosmogonic sciences, the sunlight is recognized as a symbol of **eternal** force, reinforcing the belief of common people in absolute existence. Light became a notion of eternal significance, which symbolized an absolute sense of order, which connects man to divinity. The sundials inscribed in the interior spaces and plazas, are symbolic of the idea of an eternal phenomena, which is repeated uninterruptedly. In addition, reception of early the sunlight on the pointed tops of Egyptian constructions recognized and established similar meanings.

¹³ Isozaki observes in his essay, "space of Darkness", I sometimes think that the history of European architectural spaces is an account of techniques developed to introduce natural light into buildings. It seems to me that the development of structural systems was intended mainly to increase freedom in admitting light. In the baroque period, the dramatic presentation of space was taken to an extreme." (Isozaki, P. 55)

Third intention is the manifestation and reinforcement of western interpretations of existential meanings communicated through the concepts of **center and path**. Light and geometry became instrumental in complementing the spatial composition to generate and reveal the idea of center, which is observed as the destiny and complementary notion of path, which is represented by illuminated way to the center, viewed as the journey towards communion to God.

Having discussed the intentions achieved through symbolic representations of light within western spatial compositions, I would like to revert to the subject of light versus darkness, which constitutes the fundamental philosophy of Occidental intentions of manipulating and representing light and dark in a certain way.

Idea of Dualism – light and dark as two contrapuntal notions

In western existential concepts, nature is considered chaotic, which should be segregated from human world. Along these lines of understanding, darkness is considered phenomena of nature, which should be negated and eliminated. However, light, which symbolizes the introduction of divinity and mediates between sacred (cosmos) and profane world (earth), is categorized as a benevolent force.

After considering successive development of western architecture through various cultures, it can be concluded that light is associated with symbolic notion of divinity and idea of manifesting belief in eternity. It is light, which conquers

darkness in favor of meaningful existence and sustenance of human beings. In Occidental conceptions, light versus darkness stands for a metaphorical meaning of good versus evil, sacred versus profane, vertical versus horizontal, respectively. It follows from this observation that light and dark are defined as two contrapuntal notions, which never meet. There exists no gray zone, where light and dark may co-exist. This ideology is found to be prevalent in western aesthetic sensibilities where everything is categorized into black and white without leaving any possibilities of multidimensional phenomena. It can be called a culture of dualist attitude, which has structured the phenomena of light and dark as two contrapuntal notions. In the following chapters of Oku and MA, we will consider plural and multidimensional facets of light and dark, delineated as gray space in Japanese spatial structure.

Probably resulting from this attitude, western aesthetics of the spatial experience became a pursuit of light. From the ingenious modes of introducing light in the confinement of space to a complete dematerialization in Gothic architecture, western architecture demonstrates consistent attempts to eliminate darkness and dramatize the space through magnificent play of light and shadow. Mediated by architecture, metaphorical aspects of light and darkness are brought close to human world, which are further absorbed in daily spaces of common people.

Having outlined the symbolic aspirations achieved through notions of light and darkness in Western architecture, next two chapters will focus on the key concepts of Japanese culture, which have influenced the Japanese spatial

conceptions and cultural beliefs according to which notions of light and darkness have been manipulated and articulated to project certain attitude and meanings in space. Of the several key concepts in Japanese culture, which have in some way influenced the notions of light and dark, the concepts of *oku* and *ma* are particularly significant, since they suggest the idea of depth and transience, deeply wedged into the consciousness of Japanese culture. Next chapter discusses the idea projected by *Oku*, which has significantly influenced the aesthetics in notions of light and darkness emphasizing on a shift in appreciation for darkness.

CHAPTER 3

IDEA OF LIGHT IN TRADITIONAL JAPANESE SPACES

OKU – Invisible Center

Concept of Oku originates from the depths of land, signifying the presence of divinities (*kami*) within the layers of earth. It exemplifies the idea of close association of Japanese culture with the notion of depth. At the root of the idea resides the belief in the existence of kami (divine spirits), which dwells in the depths of natural objects. Originating from the cosmogonic and religious ideas of belief in divine spirits, notion of oku is deeply wedged into Japanese cultural and existential consciousness, which finds its expression and manifestation in Japanese spatial conceptions through manipulation and articulation of light and darkness. However, prior to the discussion of the influence of Oku on the notions of light and dark, concept and ideas implied by Oku must be understood and clearly stated.

A notion implicitly expressed, Oku manifests the idea of invisible center. Center, here, does not imply the concept of center prevalent in western spatial conception. Idea of center implied by Oku refers to the idea of **Origin**. However, the idea of Origin does not exist in a physical and static sense; rather it delivers a notion of subjective origin observed and created by people from their environment and experiences. This indicates that the essence of Oku grows out of realities of life such as environmental conditions, regional peculiarities, and distinctions; rather than a formulation of abstract concept reached at by intellectualization and intricate thought processes. Oku evolves into a

heterogeneous spatial composition, which directs the configuration of the space towards the origin, conceiving a centripetal spatial structure.

Conceived as origin, Oku establishes the idea of an absolute existence. It is indicated that the origin always existed, even if it is not recognized or acknowledged. Since, Oku grows out of reality and is not a product of human construct, it manifests an idea of **absolute presence**. By extension of the idea of center, Oku emerges as a notion of absolute origin, which is undeterred in the events of the world, which transcends phenomenal existence, and manifests the idea of an absolute order.

Conceptualizing the idea of origin indicating an eternal presence—Oku, however, remains **invisible**. Conceived in the minds of people, there is no need to symbolize Oku through physical manifestations. Ideas of elusiveness and evasiveness constitute the essence of Oku. Perception of Oku, thus, largely depends on subjective perceptions of an individual. It does not represent itself in the form of symbols or icons, which is a fundamental requirement of idea of center in western spatial conceptions; rather it remains hidden in depths, be it spatial or temporal.

Above discussion identifies three essential characteristics of Oku—origin, absolute presence, and invisibility, which together generate the perception of subjective depth within the concept of Oku.

It can be seen that the concept of oku is in strict contrast with the idea of center and path in western spatial conceptions. In Occidental spaces, where center is the point to which all the paths lead is designed to be placed visibly

clear and dominant, manifesting a physical presence, which symbolically represents and connects to the cosmic world. In contrast, Oku exists within the minds of people emerging out of the distinct elements of the landform or regional peculiarity, which finds its origin within the depths of land and which may or may not have any substantial physical presence.

Having outlined the key ideas, which characterize the concept of Oku, in the next section, I will discuss the idea of darkness as an expression of Oku.

DARKNESS—An Expression of Oku

Concept of space in Japanese traditions is completely different from the absolute and concrete image of space in western architecture. Traditional Japanese Space is perceived in relation with time flow. Isozaki describes conception of Japanese space as two-dimensional or a combination of two-dimensional facets throughout which, continuous time scales flow¹⁴. The idea of space exists through the occurrence of phenomena or events in it. In absence of any phenomena, space is perceived as a void or emptiness. Along this line of thought, space may be considered a phenomenon of darkness, where the condition of darkness remains absolute and perception of space fluctuates

¹⁴ Isozaki explains concept of space in traditional Japanese architecture as, "Space was perceived only in relation to time flow. ... In Japanese thought, space is either strictly two-dimensional or a combination of two-dimensional facets. Throughout these combinations run a number of continuous time scales. Isozaki, 1979, P. 71

between extremes of void and darkness¹⁵.

For the ancient Japanese, space was essentially defined by darkness¹⁶. Parallel to the idea of Oku, which grows out of concrete realities, appreciation and aesthetics in darkness has evolved out of realities of life in which ancient Japanese were forced to live. They identified beauty and meaning within the conditions of living with which they were confronted¹⁷. Permeation of the idea of Oku in Japanese spatial conceptions resulted in an interpretation of darkness as the point of origin of space. In Japanese culture, notion of space is non-existent; space is defined in terms of darkness. Ando expresses his experience of Japanese space shrouded in darkness,

"When you entered this house it was dark ... it had moments of light ... when you were in this house and the lights were not turned on, it was very dark, and within that darkness (space) I felt that I was being enclosed. I felt secure protected. I felt that the space (in the form of darkness) of that house protected my body." (Ando, 2002, P.51)

In Japanese spaces, light and darkness are not treated contrapuntally. Idea of light in a space permeated by darkness is interpreted as flickering light of

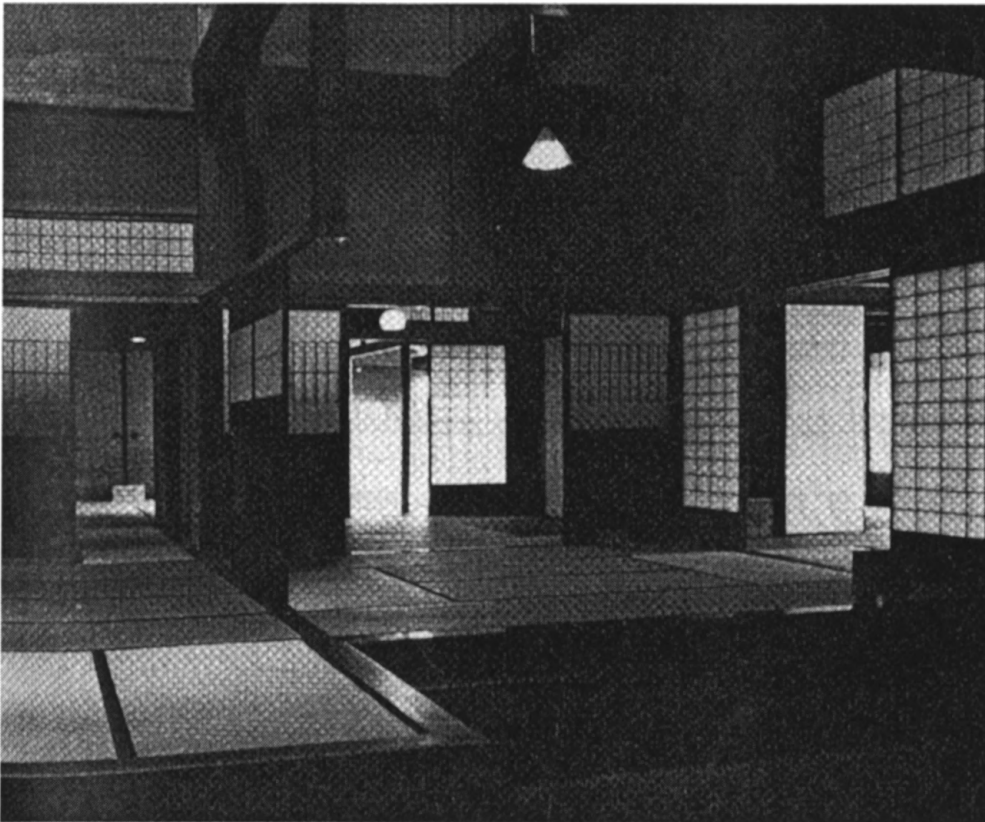
¹⁵ Arata Isozaki expresses his ideas about Japanese spaces, "The architectural spaces of Japan can be explained on the basis of what might be called a "monism of darkness". They are a monistic absolute and cannot be theoretically analyzed or manipulated. It is possible to say therefore that though voids have existed in Japan, spaces have not. However, I believe that the concept of space should be broadened to include even this absolute and insubstantial prototype. It represents an extreme condition of space. (Isozaki, 1991, P. 57)

¹⁶ Isozaki observes in his essay, *Space of Darkness*, "[Traditional Japanese] space manifests itself as the density of light, but the intensity undergoes change and ultimately becomes darkness. Japanese space is always shrouded in darkness. (Isozaki, 1991, P.57)

¹⁷ Tanizaki observes in his essay, *In Praise of Shadows*, "The quality that we call beauty, must always grow from the realities of life, and our ancestors, forced to live in dark rooms, presently came to discover beauty in shadows, ultimately to guide shadows towards beauty's ends. (Tanizaki, 1991, P.31)

candle or a dying ray of The sun, which illuminates the space from within. Dim light glowing in the dark space manifests shadows, which molds the space with altering intensities of light. Space is rendered in the poetics of light, shadow, and darkness. It is in line with this perception of space that Tanizaki compares interior of a Japanese room to an ink wash painting¹⁸. In his essay, *In Praise of Shadows*, Tanizaki describes his experience of space articulated by shadows, in which he perceives darkness materializing into a black wall,

" On the far side of the screen, at the edge of the little circle of light, the darkness seemed to fall from the ceiling, lofty, intense, monolithic, the fragile light of the candle unable to pierce its thickness, turned back as from a black wall." (Tanizaki, 1991,P.51)



Interior of a Japanese room depicting gradations of monochrome of darkness
Bognar, 1985, P.57

¹⁸ Tanizaki observes, "A Japanese room might be likened to an inkwash painting, the paper-paneled shoji being the expanse where the ink is thinnest, and the alcove where it is darkest. (Tanizaki, 1991, P.33)

Intensity of light, which molds the surrounding space, does not manifest itself as an absolute presence. It exists ephemerally with continuously varying density, which eventually disappears into darkness. Darkness emerges as a prototypical space, against the background of which light and shadow co-exist. It appears as an all-consuming darkness¹⁹, which persists throughout the conception and manifestation of space, assuming an absolute presence; at this moment, light and space converge to zero, reflecting the observation of Maki, "The oku is nothing but the concept of convergence to zero." (Maki, 1979, P.59)

Within this context of discussion, darkness is perceived as an origin, which gives existence to the idea of space, light, and shadow. It is this idea of darkness, which makes it parallel to the idea of Oku, generating three essential constituents—idea of Origin, absolute presence and idea of invisibility; invisibility being intrinsic to the perception of darkness. Perception of darkness made possible despite it being formless and intangible, manifests darkness as an embodiment of Oku and it is this characteristic of darkness, which native Japanese adopted in their culture, generating the essence of oku in darkness.

In his essay, Tanizaki interprets Japanese spaces, as a world of shadows, which manifest the idea of space through varying degrees of intensity. Asserting darkness as fine aesthetic sensibility of Japanese culture, Tanizaki comments on the mystery of shadows,

¹⁹ ¹⁹ Isozaki tells of his experience with darkness, "...once the lights were out nothing had form. A monster of uncertain dimensions appeared. It was shapeless and vague and had the terrible capacity to swallow and dissolve every imagining. It was not really space but darkness. It could only be darkness that swallowed up all that the naked human imagination wrought. Darkness became an absolute, a prototype. (Isozaki, 1991, P.56)

"The mysterious Orient of which Westerners speak probably refers to the uncanny silence of these dark places. And even we as children would feel an inexpressible chill as we peered into the depths of an alcove to which the sunlight had never penetrated. Where lies the key to this mystery? Ultimately it is the magic of shadows. Were the shadows to be banished from its corners, the alcove would in that instant revert to mere void." (Tanizaki, 1991, P. 34)

In agreement with Tanizaki's ideas, Isozaki interprets, in his essay *spaces of darkness*, that if normal human perception of three dimensional space is accepted as the central axis, at one pole are the spaces having the image of darkness, that is, spaces associated with depth, psychology, magic, and symbols, suggesting extreme spatial conditions.

However, it is not merely the idea of mysticism associated with darkness, which generates the affinity of Japanese to the world of shadows and absolute blackness. The idea is embedded in the concept of depth, which is generated through the perception of darkness. Japanese spatial conceptions have evolved out of the concept of Oku, which manifests the notion of depth in space.

Darkness, being a metaphor for the perception of Oku, evokes the similar idea of depth in space, which is characteristic of the concept of oku. Isozaki comments about the depth within a space of darkness,

"From the viewpoint of the human observer, an encounter with a space of darkness is a process of delving into the depths of his own personal consciousness". (Isozaki, 1991, P.59)

Appreciation of the aesthetics of darkness by generating the essence of oku in spatial conceptions arises from the deep religious belief in the idea of divinity within the depths of natural objects. Having discussed the meanings generated and communicated by the idea of darkness as an embodiment of oku,

in the next section, we will discuss the initiation of the concept of Oku in Shintoism and the interpretation of darkness as a metaphor for depth within which kami (divine spirits) is believed to reside. The notion of spirituality or divine spirits (*kami*), which is the religious and cosmogonic element behind the concept of oku, sheds light on the divine connotation of the spaces of darkness.

INITIATION OF OKU IN SHINTOISM

Idea of Oku is deeply tethered to the existence of kami (divine ancestral spirits), which are believed to reside in deep mountains, sea, within the depths of trees (oku) and so on²⁰. Inception of Oku can be traced back to the early periods of development of Japanese culture—Yayoi era (200 B.C.—250 A.D.) Discussion of the spiritual origin of Oku in the form of dwelling place for divinities is significant since a background of the religious and cosmogonic origin of Oku and kami will shed light on our understanding of initial nature and subsequent employment of the idea in the form of darkness in traditional Japanese spaces.

ENVIRONMENT AND SHINTOISM

During Yayoi era, which spanned from 200 B.C. to 250 A.D., native Japanese people used to reside in the mountains. Their living was completely dependent on hunting and gathering. Gradually in Yayoi period, people started moving to the plains as prime mode of living shifted to farming and rice

²⁰ Isozaki proposes that the ancient Japanese probably interpreted nature in their efforts to give visual embodiment and form to divinities (*kami*) and in the imaginative pattern they evolved for the permeation of the entire cosmos by means of these kami. (Isozaki, 1979, P.70)

cultivation. Transition of more and more people from mountains to the plains below led to a segregation of environment. Mountains were left isolated and people began to live in the plains. This phenomenon resulted into conception of two different kinds of environmental structures in the minds of people. One, the villages on the planes—where people lived, and other, mountains—outside the realm of the normal living phenomena.

Gradually, mountains came to be regarded as higher planes, a forbidden area meant for the residing of sacred entities and not human beings. Eventually, mountains were held with great reverence and they were worshipped as sacred place, within the depths of which spirits reside.

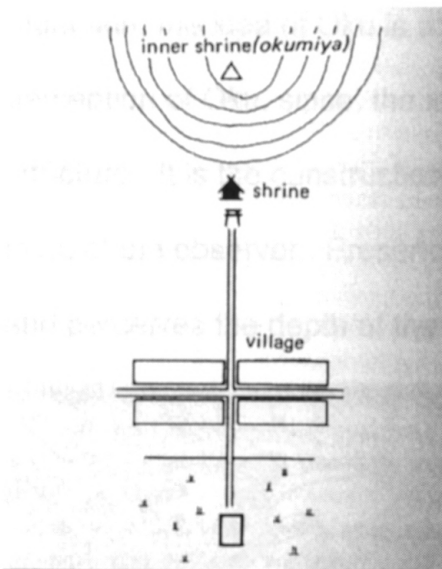


Diagram depicting alignment of Okumiya and village shrine
Maki, 1979, P. 54

Construction of shrine in the village, which usually lies along the foot of the mountain, suggests the presence of a remote shrine far and deep in the mountains, signifying the idea of divinities lying within the depths of the mountains. Idea of Okumiya (remote shrine) is in line with the notion of invisible center of Oku in the form of three implied propositions—one is that village shrine

is indicative of the presence of a remote shrine, which is point of origin for the village shrine. Okumiya imparts existence to the village shrine as it identifies with the source. Second, Okumiya exists unconditionally, which means, even if in an absence of recognition or absence of establishment of a shrine, the idea of spirit exist deep in the mountains. Oku is not dependent on a condition of recognition or concretization. It always exists. This ideology implies that idea of Oku has evolved out of soil and identifies with the characteristics of the land. It does not identify itself with human construction. It is a feature of the land, which implies an absolute presence, an eternal existence. Third implication is that Oku remains hidden. Since it is a characteristic of land and lies deep within the mountain, the idea of Oku is always implicitly expressed. It allows for subjective perception of Oku, since, the idea is not expressed through a physical form or structure. It is the construction of mind and belief and thus Oku lies within the mind of the observer. Presence of Oku thus identifies with the one who believes and perceives the depth of the land.



Winding pathways between Okumiya and village shrine, (Maki 1979, P.55)

Recognition of Oku, deep in the mountains, was the beginning of Shinto

religion. Shinto, an ancient Japanese religion, based on animistic and pantheistic worldview, is founded on the idea of Kami (sacred entity), which is believed to reside in deep mountains or within the depths of sea, signified by concept of Oku.

However, Kami does not only exist within mountains or sea, rather it is believed to permeate within the depths of all the natural objects. It was pantheistic mode of belief, which resulted into multiple sources of Oku; the idea essentially being impregnated with the notion of depth. Along this line of thought, darkness, perceived as an embodiment of oku and a metaphor for depth, is believed to provide appropriate condition for kami to reside. Within this context, darkness is identified as an idea signifying connotation of divinity for Japanese people.

KAMI AND THE IDEA OF DARKNESS

Meaning of Kami, as the view held by various modern scholars, is a combination of *KA*, which relates to something hidden or dim like the shadow and *MI*, which relates to something tangible like the body. In line with this interpretation, *kami* literally means a sentient being, which remains elusive and intangible. According to Japanese beliefs, idea of kami refers to divine spirits, which remain invisible and reside in the depths of mountains or seas. Kami is believed to visit the world of the living on a cyclical time basis. The place, where kami will descend is demarcated by delineating four posts at four corners of the place. The appearance of kami at exact time periods at specific sanctified places

(*yorishiro*), distinguished by the temporary construction of four posts at each corner, initiated the segregation of time-space cognition into categories of sacred and profane. The cyclic repetition of initiation of sacred moment through appearance of kami at a specific place divides conception of time into divisions of sacred and profane. This segregation is parallel to the idea of discovering indications of divisions in their natural environments, which is structured into divisions of sacred zone of mountains and profane lower plains inhabited by human beings. Along this concept, the idea of kami is believed to determine concepts of time and space, which resulted in sets of opposites as day and night, light and dark, the divine world and the world below. Within this context, darkness is interpreted as the divine abode of kami from which it appears on a cyclical basis during Shinto rites, evoking the idea of conception of specified time as sacred.

Permeation of idea of darkness as a connotation of divinity has permeated Japanese culture in varied forms of arts and rituals. Isozaki contends that rituals conducted to invite kami to the earth were the origin of the entertainments that ultimately developed into the Noh theatre and Kabuki. In other words, in the traditional Japanese theater, the appearance of an actor on the stage can be interpreted as the appearance of a kami or spirit from the world of darkness.

(Isozaki, 1979, P.76) Isozaki further adds,

"Shinto Gods (Kami) are believed to appear from and disappear into darkness [signifying the idea of Oku]. At festival times, in the dark of night, a palanquin (*mikoshi*) in which is enshrined a divinity in the form of a mirror is brought into villages in the accompaniment of a torchlight procession". (Isozaki, 1979, P.76)

Following the above discussion, it is observed that connotation of divinities and *kami* is the idea underlying the Japanese sensibilities through which they seek aesthetics and meaning in the depth generated by darkness.

In context to the similar intentions of evoking the ideas of sacred space-time conception, significance of darkness has been translated into architectural vocabulary through spatial compositions and interaction of material and light, in order to integrate the idea of depth into the daily lives of people. In the next section, we will discuss the manifestation of darkness in traditional Japanese spaces as an expression of depth, suggesting the idea of *oku*.

PERCEPTION OF OKU AS DARKNESS IN TRADITIONAL JAPANESE SPACES

Central to the idea of *Oku* is a spatial construct of *envelopment*. *Oku* suggests an *innermost space*, which is composed through layering of spaces. Maki recalls his observation of experiencing Japanese spatial composition based on the concept of *Oku*,

"The spatial creases ... are ... created by the multilayered boundaries overwrapped and interrelated by the topography, roads, fences, trees, walls, etc. Metaphorically speaking, I get the impression of penetrating the layers of an onion". (Maki, 1979, 51)

Spatial composition inspiring a perception of getting into the core, suggests heterogeneous construct of space. Perception of space shifts inwards, constituting the idea of centripetal spatial structure. Idea of depth in the space is incorporated through changing perceptual planes, which are punctuated at

various points during the journey towards the center. Layers of spaces are transpired successively, resulting into a phenomenon of heightened expression of depth.

Layering of spatial compositions implying notion of sanctified direction spatially is frequently observed in traditional Japanese spaces; composing idea of Oku through depth. Earliest instance of this nature can be cited in the idea of approach to Okumiya—remote shrine deep in the mountains. Okumiya is placed roughly perpendicular to the spine of the village. In spite of geometrically rational positioning, approach to the shrine is highly irrational. Mountain trail leading to Okumiya is winding and deliberately built to increase physical perception of distance. Increased perception of distance however, does not indicate a sense of spatial expanse as in open space; rather it is a perception of space, which acquires depth through successively revealing new perceptual planes²¹. Such spatial compositions are also frequently maintained in the approach to Shinto shrines and teahouses. Described as phenomena of successive observation²², paths turn at angles (such as right angle or U-turn), which facilitates encounter only with the immediate surrounding while rendering obstruct any perception of successive event.

Layers of spaces, which Maki describes as “spatial creases”, in his trip to

²¹ Maki observes, “What matters is not absolute height or bulk but the representation of reaching the goal. Many a path to a temple or shrine turn and twist; a slight difference in undulations or perhaps the existence of a tree offers everchanging vistas. It is the construction of a spatial experience with a time parameter. (Maki, 1979, P.59)

²² To be discussed in detail in the next chapter

the summit of Oyamadai and Mitadai hills in the vicinity of Tokyo, refer to the notion of depth wedged in a confined and densely populated area. Maki observes,

"If one goes along one of these narrow lanes, one will often encounter a hidden, secret scene never imaginable from the outside. Here the path always curves as if forced to do so, switching back along a cliff or making a sudden transition into stone steps". (Maki, 1979, P.51)

The idea of unfolding of perceptual planes successively implies that the essence of depth is not phenomena of space. Within this context, idea of depth becomes essentially **embedded in time**. Serge Salat observes,

"Planes of perception arrange themselves in a temporal, not a spatial succession. They correspond to the emergence of constantly changing present times, linked by an invisible line, which is that of our own subjectivity and its successive responses to them." (Salat, 1988, P.29)

Within context of temporal dimension, in traditional Japanese residences, notion of depth is evoked through a monochromic gradation of light, which increasingly gets darker, pointing to the idea of darkness in time. Signifying the notion of depth through gradient, which is shifting to darkness is evident in both singular volumes of space and sequential spatial configurations, which is arranged according to the successive revelation of spaces.

Next section considers two types of traditional residential layouts in Japanese culture, which generate the subjective perception of depth through gradient of light and dark in space-time conception.

MANIFESTATION OF OKU AS DARKNESS IN TRADITIONAL JAPANESE HOUSES

Primarily, two different types of layout are observed in traditional Japanese houses, each having their own system of manipulating light and establishing perception of Oku (darkness) in the innermost structure. The two types are described as, the *ie-mise* type, literally, dwelling-shop type of configuration, where the building faces the street directly and the *ie-niwa* type, literally, 'house-garden' type, where house is set deeply inside a garden²³.

The **ie-niwa type of spatial configuration** places house deep inside dense garden. These gardens imitate nature in miniature. Another significant feature of such spatial configuration is the construction of *engawa*, built around the core structure as a continuous verandah under extended eaves. *Engawa* was an essential feature of residential style, known as, *Sukiya-zukuri*²⁴. *Engawa* generates an ambiguous space, which is simultaneously part of interior spaces and exterior garden. It becomes the prime mode of transition from the outermost space (garden) to the innermost space (interiors of the house).

²³ The two types of houses are based on Nitschke's analysis of types of en spaces in his essay, "En- Transactional Space", P.85

²⁴ Kurokawa describes the use of *engawa*, "Another term prefixed with en is *engawa*, or veranda, the special feature of domestic architectural styles that first appeared in the medieval period. The three major historical architectural styles in Japan, starting with the *jiin-zukuri*, or temple style, and evolving into the *shoin-zukuri*, or palace style, and finally the *Sukiya-zukuri*, or residential style, are all distinguished by the employment of *engawa*. P. 53

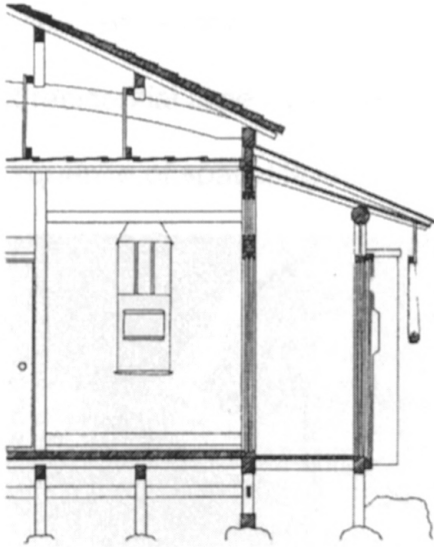


Diagram of the ie-niwa type of construction
Nitschke, 1993, P. 90



Engawa integrating the interior and the exterior
Plummer, 1995, P.99

With a background of spatial configuration of the ie-niwa type of residential style, next follows a discussion on the phenomena of light in the spaces manipulated through syntax of materials, spatial composition and engawa.

In ie-niwa type of spatial configuration, light from the garden, barely manages to penetrate the density of the green vegetation. Path to the house through the garden is shaded by dense trees and vegetation and occasionally, direct ray of The sun, falling on the ground guides the way to the house. Engawa cuts off direct light from entering the interior of the house. Light falls on the ground and then reflected inside. The entire spatial construction structures layers of intensities of light, which is getting dimmer and darker as it approaches the innermost space. Tanizaki verbalizes his experience in such a space as, "The little sunlight from the garden that manages to make its way beneath the eaves and through the corridors has by then lost its power to illuminate, seems drained of the complexion of life." (Tanizaki, 1991, P.35)

The spatial configuration and manipulation of light and dark in ie-niwa type of residential style illustrates monochromic gradation of light to dark through a sequence of spatial layers.



Light conditions in engawa and the garden
Plummer, 1995 P.116



Light reflected by the floor of the engawa
Plummer, 1995, P. 203

Contrary to the diffused spatial layout of ie-niwa type of construction, the spatial layers in **ie-mise type of residence** are concentrated along the periphery of the house. In the absence of any garden in front of the house, ie-mise type of houses face the street directly and introduce a buffer zone between the street and the interior through layers of interceptors along the periphery of the house. On the periphery, these townhouses are layered with a series of openings, which regulate the penetration of light in various ways. There exist several different layers²⁵ of interceptors of various degree of permeability. Through construction of layers of openings on the periphery, which enclose the space inside, the effect

²⁵ Nitschke identifies four layers of interceptors in a traditional Japanese townhouse. From the innermost layer to the outermost layer, these are, shoji panels, solid sliding wooden rain shutters, storage box of rain shutters, hanging reed or bamboo blinds. (Nitschke, 1993, P. 84-93)

of light is constantly distilled and deintensified; eventually light, which enters the room is nothing more than a dying ray of the sun, deprived of all color and vigor. Tanizaki verbalizes the idea of joy through Japanese aesthetics in shadows, "We delight in the mere sight of the delicate glow of fading rays clinging to the surface of a dusky wall, there to live out what little life remains to them". (Tanizaki, 1991, P.31)

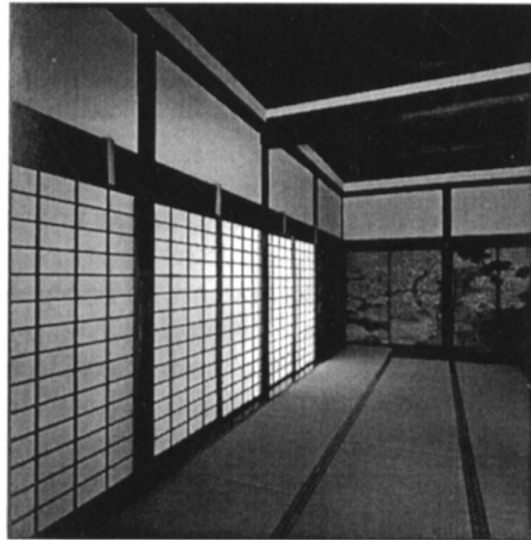
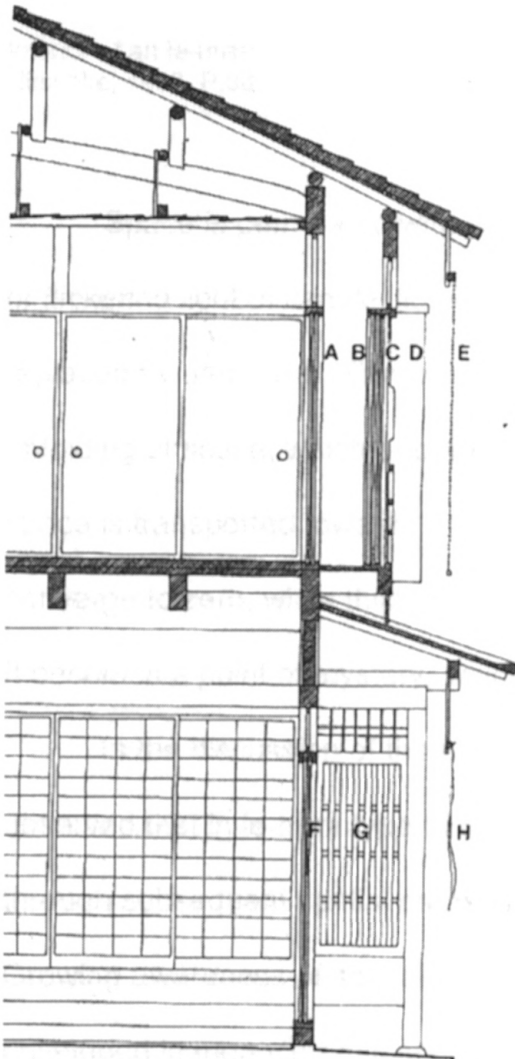


Diagram of a cross-section through Ie-Mise type of dwelling (Left) Nitschke, 1993, P.86

- A- Shoji
- B- Transparent sliding glass panels
- C- Solid sliding wooden rain shutters
- D- Storage Box for rain shutters
- E- Hanging Reed or Bamboo Blinds
- F- Sliding wooden latticed entrance door
- G- Latticed window
- H- Split curtain

Light filtering through shoji (Above), Plummer, 1996, P. 137



Interior of an ie-mise
Nitschke, 1993, P.88



Exterior of an ie-Mise
Bognar, 1990, P.17

Space is permeated with darkness and occasionally dying ray of The sun or flickering light of candle illuminates the space for fraction of time; eventually replaced by darkness. This configuration of space manifests idea of Oku as unfolding of space, which approaches complete darkness in time. Gradually, the space is transported towards a point in time, when space and light, both converge to zero, while thick darkness does not permit any perception through it. It becomes a point of mystery, which Tanizaki describes as “a moment of trance”.

In the discussion of the two types of residential configurations, it is observed that in ie-niwa type of construction, the idea of depth is generated through subsequent spatial creases, which get increasingly darker in perception. Growing awareness of spatial directivity is delineated through spatial layers enveloped in monochromic gradations of light and dark, which ultimately dissolve into the darkness of the deep interior.

In ie-mise type of construction, similar intentions are realized through means of temporal arrangement of monochromic gradient of light and darkness.

Space does not grow into darkness through subsequent layers of spatial creases enveloped in increasing intensity of darkness; rather it is a singular volume of space, which achieves sense of depth through monochromic gradation of darkness in time.

Having discussed the process of generating and manifesting the idea of depth through monochromic gradation of darkness in space-time conception, next section focuses on the idea of elusiveness, inherent in the concept of oku, which is identified, recognized and delineated through notions of light and dark.

IDEA OF EMPTINESS-Embedded In the Concept of Oku AND DARKNESS

Oku manifests an empty center. Fumihiko Maki mentions in his essay, 'Japanese city spaces and the concept of Oku',

"In many cases the oku has no climax in itself as the ultimate destination begins to be unfolded. One rather seeks drama and ritual in the process of approaching it." (Maki, 1979, P.59)

He asks further, questioning the elusive nature of Oku,

"Does the oku disappear when it is exposed? Or does it scatter away?" (Maki, 1979, P.59)

Discussed earlier, Oku conceptualizes subjective depth, which is perceived in the minds of the observer. If it is unveiled, it leads to the disappearance of Oku. Exposure of Oku leads to the extinction of the idea. Meaning of Oku lies in the process of approaching it. Successive unfolding of destination through a sequence of perceptual planes leads to an experience of entering the depths of space. Underlying idea behind the manifestation of spatial composition through a process of layering is a configuration of processional space, which is punctuated with ever-changing experiences in the process of

approaching oku. Winding trails to the shrine often end into a modest version of shrine, nothing ostentatious, which observer would have expected as a reward after arriving there with such difficulties. This is the idea behind composition of traditional Japanese architecture. It is composed as architecture of procession, space as a phenomena, which continuously emerges into new perceptual planes.

In line with the above discussion, in which the idea of space is processional with successive progression of illumination level to a zero, leads to the expression of darkness (manifestation of Oku) as an empty center. Regarded as the origin, darkness structures the innermost space of traditional houses. However, it is not the destination, which constitutes the essence of the spatial composition; rather it is the idea of experiencing the progression of spaces involving a gradient of illumination level, which leads to complete sensory experience through growing darkness. Structuring of spatial composition through light and darkness is in line with the notion of Oku as a manifestation of an empty center.

Parallel to the idea of emptiness in Oku, according to Japanese conceptions of time and space, in absence of darkness, space becomes mere void, an emptiness, which has no meaning. It manifests an intangible layering in time, which is unveiled for a brief moment of time, when a ray of light pierces through it and ultimately fades away into darkness.

This idea of evasive characteristic of oku depicted through darkness is in direct contrast with the concrete and visible (physically) projection of the idea of center (manifested through shaft of intense light) in western spatial conceptions.

In addition, the heterogeneity of space, which is maintained through gradient of light within sequential spatial creases manifesting spatial directivity (centripetal composition) does not exist in occidental spatial configuration, which clearly manifests the spatial configuration of center and path, depicted through contrapuntal elements of light and dark, in which illuminated paths lead to light in the center, generating homogenous spatial composition²⁶.

It is observed in the above discussion of inter-relationship between oku and darkness that the original conception of divinities (kami), penetrated deep into Japanese aspects of cultural and existential consciousness, which perceived aesthetics and sensibilities in the notions of depth and darkness. Japanese people not only recognized and appreciated these ideas of depth and connotation of divinities but also, strived to invent methods to project these intentions in space-time conception through ingenious spatial configurations. Ando's observation in this context is relevant to mention,

"Whereas western thought is hinged on individual consciousness, the Japanese have traditionally held a pantheistic view of nature and entrusted consciousness to god, who is seen to dwell in all things. Accordingly, within an architecture's form a spiritual and invisible something inherited from previous ages is felt to lie concealed, though ever refined and transforming in character."
(Ando, 1995, P. 474)

In line with this discussion, next chapter continues to consider elements of religious and philosophical faith, which have largely determined Japanese culture

²⁶ Maki's observes the notion of homogeneity of space in west, "...the moment the concept of uniformity of space is introduced, the concept of oku in the Japanese sense becomes untenable and gives way to the more universal and easily comprehended concept of center. Therefore, the center unlike the oku must be open and visible. (Maki, 1979, P.58)

and manifested these intentions through elements of light and darkness. In the following chapter, I will discuss another key element present in Japanese culture - MA and sunyata, - which generates the idea of emptiness in the Japanese spatial consciousness and which has been attempted to depict through manipulation of phenomena of light and dark in certain ways.

PERCEPTION OF EMPTINESS (*MA* and *Sunyata*)

Ancient Japanese translated their understanding of existence of the world, including nature and cosmogony, in terms of *MA*, which was further absorbed into everyday human world by constructing conceptions of space-time based on the interpretations and projections of *MA*. For the purpose of generating and communicating the essence of *MA*, light and darkness became instrumental in conceptualizing space-time for the native Japanese.

In order to explore the significance of notion of light in expression of *MA* in Japanese spatial conceptions, it is essential to begin with the elusive concept of *MA* and its interpretations and translations in space-time cognition.

Isozaki, in his essay, "MA and Space" gives an objective interpretation of term *MA* (quoting from the Iwanami Dictionary of Ancient terms), "In the Japanese language, the word *ma* is a conceptualization of both space and time and means, in spatial terms, the 'natural distance between two or more things existing in a continuity' or the 'space delineated by posts and screens (that is rooms)' or, in temporal terms, 'the natural pause or interval between two or more phenomena occurring continuously". (Isozaki, 1979, P.70)

Gunther Nitschke, in his essay, "MA—Place, Space, Void"²⁷, however, identifies three different interpretations of *MA* – objective, subjective and metaphysical, which are found to be prevalent in Japanese culture. Beginning with the ideogram cited by him and etymological meaning of the term identified in the essay, the ideogram *MA* consists of two characters, one symbolizing gate, and other one symbolizing the sun. However, originally the character consisted

²⁷ Nitschke, 1993, P. 49

of pictorial sign for moon and not the sun, which expresses the meaning of MA for a Japanese as a delicate moment of streaming moonlight from within a gap.

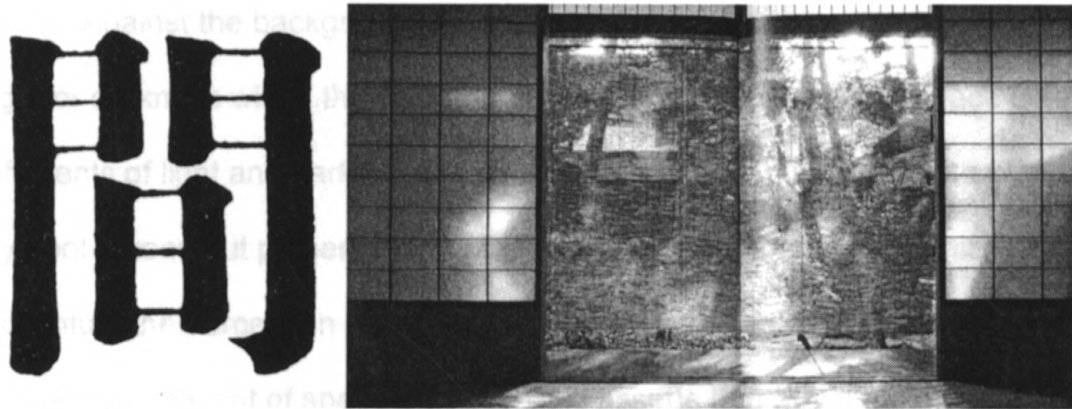


Diagram depicting ideogram MA, Sunlight streaming in from sudare, Plummer, 1995, P.370
Nitschke, 1993, P. 48

Through the etymological derivation of the ideogram MA²⁸, Nitschke has recaptured the essence of MA, which expresses simultaneously the idea of phenomena, presented through light, and the idea of emptiness, delineated as gate (gap).

Following the above interpretation of the term MA, ancient Japanese conceptualized space-time cognition as a dynamic perception of successive events intercepted by moments of emptiness (MA), which expresses the existence of space identical with events occurring in it. Isozaki, as explained earlier, describes Japanese space-time cognition as two-dimensional facets through which one or more time scale runs. This line of understanding indicates that in Japanese culture, space is perceived dynamically in relation with time

²⁸Nitschke interprets, "For a Chinese or Japanese using language consciously, this ideogram, depicting a delicate moment of moonlight streaming through a chink in the entrance way, fully expresses the two simultaneous components of a sense of place: the objective, given aspect and the subjective, felt aspect. (Nitschke, 1993, P. 49)

flow. In this context, the notion of space as known to westerners --three - dimensional volume—is absent in Japanese spatial conceptions.

Against the background of Japanese space-time cognition, permeation of light or darkness within the volume delineated by walls, generate space in terms of events of light and dark. In this context, light and darkness do not evoke symbolic icons but present momentary events in space and time, which constitute the perception of space and time for common Japanese. In his essay, "Japanese concept of space-time", Isozaki asserts that MA is maintained by absolute darkness. In another essay, "spaces of darkness", he further concludes "... light in Japanese space is only a flickering presence in the primeval darkness. Light is therefore not an absolute. It is ephemeral and must always disappear in the end. Space manifests itself as the density of light, but the intensity undergoes change and ultimately becomes darkness. Such a darkness cannot be dealt with contrapuntally. It is an absolute blackness, and provides the background against which every phenomenon manifests itself. It supports from within our very ideas." (Isozaki, 1991,P. 57)

With reference to *oku*, which has been discussed in the previous chapter, darkness is the moment when space and light converge to zero. Darkness constitutes and conveys the idea of an absolute presence in which the ephemeral presence of light generates the idea of space. It is against the background of darkness that flickering light creates shadows, which delineates the presence of space. Light and shadow are rendered ephemeral and darkness emerges as an idea representing eternal presence, which articulates the presence of light, shadow, and space. Along this line of discussion, light and

shadow appear as events, which are threaded together through darkness, which is believed to be eternally present as emptiness.

Perception of space in terms of phenomena of light and shadow, occurring against background of darkness, goes back to the idea of kami, which was discussed in the previous chapter, Oku. The idea of perceiving space-time with respect to the events occurring at specified time and at a particular place finds its origin in the conception of the belief in divine [ancestral] spirits, Kami and its permeation into natural objects.

SPACE-TIME CONCEPTION IN SHINTOISM

Origin of the perception of emptiness in space-time conception can be referred back to the belief in the existence of kami in the depths of mountains and seas. Kami, as described in the previous chapter, were the divine spirits, which formulated the basis of the later modes of space-time cognition such as *oku* and MA.

Kami, which resided in deep mountains or seas, were thought to descend on earth at specified times according to specific procedures. Sanctified places, known as *yorishiro*, were delineated by four posts on each of the corners—the construction called *Himorogi*—and constituted a vacant space, demarcated for kami to descend. Idea of space exists until the permeation of kami into the vacant space is not over. Once the occasion is over, the temporary construction is demolished and idea of space gets extinct along with the disappearance of kami. This signifies that for ancient Japanese, existence of space remained only

until the duration of the occurrence of phenomena. This attitude and belief explains the attachment of Japanese for land (which signifies *oku*), while demonstrating no affinity for the construction on the land, (which implies the idea of MA). Concepts of time-space evolved out of such beliefs and rituals, which are interrelated to the existential meanings of Japanese cosmogonic and philosophical beliefs²⁹.

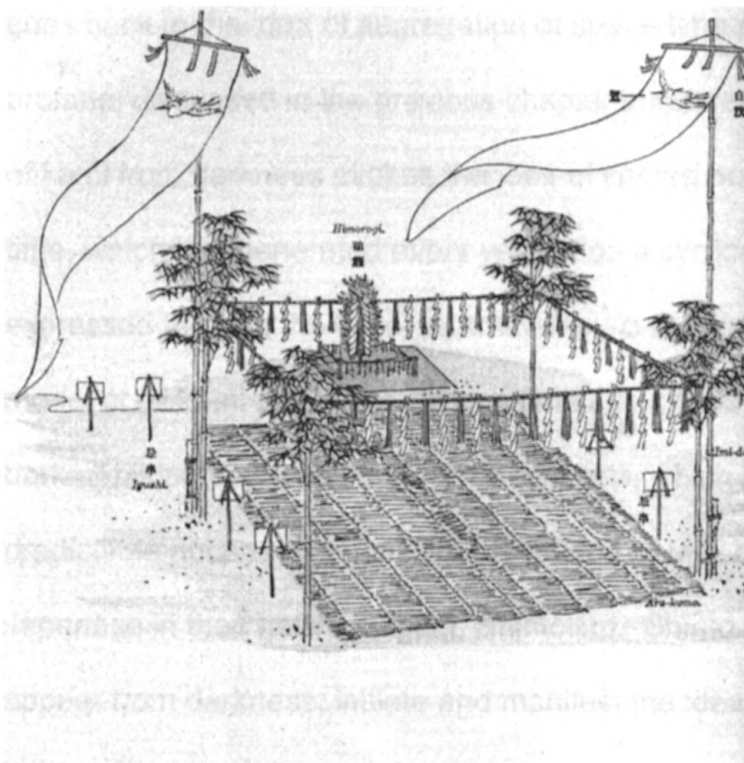


Diagram depicting
Yorishiro and Himorogi
Nitschke, 1993, P.64

In ancient period, idea of divinity was associated with concrete and material objects and kami was believed to permeate into natural objects such as

²⁹ Isozaki observes in his essay, "Japanese concept of space-time"—the very acts of preparing such a space and waiting for kami to descend into it had immense influence on later modes of space-time cognition. (Isozaki, 1979, P.71)

rocks, trees, and other natural phenomena. By medieval period, presence of non-material, atmosphere, conditions and spiritual quality was acknowledged and concrete objects were supplemented by feeling for unseen but felt qualities of objects. It is this transformation, which perceived the presence of kami in the depths of darkness, rather than material objects. In line with this belief, in Shinto rituals, kami (Shinto Gods) is believed to appear from darkness at specific occasions in a year and eventually disappear back into darkness. This belief goes back to the idea of segregation of space-time conception into sacred and profane, discussed in the previous chapter in reference to oku. The appearance of kami from darkness evokes the idea of sacred point or the original point in time, which is regenerated every year or on a cyclical basis. This notion is expressed through the belief in Amaterasu-o-kami, which is perceived as the model of all kami and which divides time into cycles of day and night, light and dark. This perception of interval or divisions, which is based on a cyclical and a predictable notion, is suggestive of the idea of MA, conceived by ancient Japanese in their native religion, Shintoism. Shinto Gods, which are believed to appear from darkness, initiate and manifest the idea of space for a short duration until the ritual is not over. Here, again, darkness is expressed as the idea of emptiness or the origin, which manifests the notion of space by generating and articulating flickering presence of light and shadow evoking the idea of divine spirits.

IDEA OF ABSOLUTE EMPTINESS (SUNYATA) IN BUDDHISM

A significant paradigm shift took over with the advent of Buddhism, which, along with Shintoism, has introduced philosophical and religious ideas and which have largely determined the structure of the Japanese culture. Buddhism brings in the ideas of temporariness and absolute emptiness (*sunyata*) into Japanese culture. It perceives every existence on earth as a phenomenon, which passes through various phases of growth and decay, ultimately dissolving into absolute emptiness, termed as "*sunyata*". All existence on this earth, natural objects, sky, light or even Buddha is in a constant process of perpetual creation and regeneration. Man is not separated from this process of transmigration and is bound by the essential laws of impermanence and ephemeral existence.

Within the context of temporariness and absolute emptiness, the concept of MA finds its parallel in the idea of *sunyata*. Objective interpretation of term "*Sunyata*", which originates from Sanskrit, is a *state of zero*. In addition, "*sunyata*" is always been a metaphysical order of state, rather than belonging to subjective realm of felt aspects. The idea of *sunyata* indicates realm of absolute emptiness, which is the source of all events and into which all the events ultimately disappear.

At this point of discussion, it is relevant to introduce another term "*ku*", which is interrelated to the concept of MA and is originated from the concept of "*sunyata*" in Buddhist terminology. *Ku*, which means emptiness or void, can also

be read as *sora*³⁰, which means sky. *Ku* refers to the idea of “*sunyata*”, which denies any distinction between existence and non-existence but posits that they both exist simultaneously in the state of *ku*. With reference to this proposition, every occurrence or phenomena, including light and darkness, is believed to exist in a state of emptiness, which is a state of absolute emptiness, which remains unaltered and ever present in presence of perpetual appearance and disappearance of events.

This concept of “*sunyata*” or *ku*, introduced during Buddhism, constitutes a similar notion of emptiness, already understood and perceived by ancient people as the concept of MA, only difference being a shift in perception of concrete and material things to growing sensitivity towards perception of intangible aspects of phenomena such as mist, clouds, shadows and fragrance.

“*Sunyata*”, though eternally present, reveals itself at the moment, when one event is in the process of disappearing and subsequent event is still in the process of emerging out of *sunyata* (emptiness or void). Events separated by a moment of interval are believed to appear and disappear into “*sunyata*” and in the process, “*sunyata*” manifests itself momentarily in between successive events as the source of all phenomena or in other words, successive events are articulated by the presence of absolute emptiness. Although, Japanese people could perceive idea of *sunyata*, they did not express this idea through emptiness or nothingness; rather they attempted to express idea of *sunyata* through conception of dynamism of events in spatial compositions. The idea of transient

³⁰ Kurokawa interprets the meaning of KU, “... *ku* represents a view of the universe which embraces all contradictions and paradoxes. (Kurokawa, 1988, P.55)

state is communicated through the ephemeral presence of events, which suggests temporariness of the world. At the same time, perception of successive events, which are punctuated by emptiness, reveal “*sunyata*” or MA as the source of every phenomena and every existence of the world.

At this point, Zen philosophy, which proposes that “*sunyata*” is “*tathata*” and “*tathata*” is “*sunyata*” becomes relevant. It follows the idea implied by the term *ku*, which denies any distinction between existence and non-existence. “*Tathata*”, which means world of particulars, constitutes the perpetual extinction and generation of events out of absolute emptiness. It follows that “*sunyata*”, perceived as absolute emptiness, identifies itself with the presence of “*tathata*” and conversely, “*tathata*” identifies itself with the idea of “*sunyata*”, both being meaningless in absence of each other³¹.

After a brief background of the idea of space-time conception, which is based on the perception and manifestation of MA or *sunyata*, we shall now explore significance of elements of light and darkness in generating these deep cultural notions. According to the Buddhist philosophy, all the existence of the world, including light and darkness are perceived as events, which exist for a brief period and constantly undergo a process of regeneration and decay. In addition, the idea of *Ku*, suggests that elements of light and dark, although being contrapuntal notions, co-exist in a state of *sunyata*. In context of light and darkness, Kurokawa proposes that the state of *sunyata*, in which both the elements of light and dark co-exist, is suggested by the twilight color of Rikyu

³¹ D. T. Suzuki observes, “Emptiness which is conceptually liable to be mistaken for sheer nothingness is in fact the reservoir of infinite possibilities. (Suzuki, 1959, P.298)

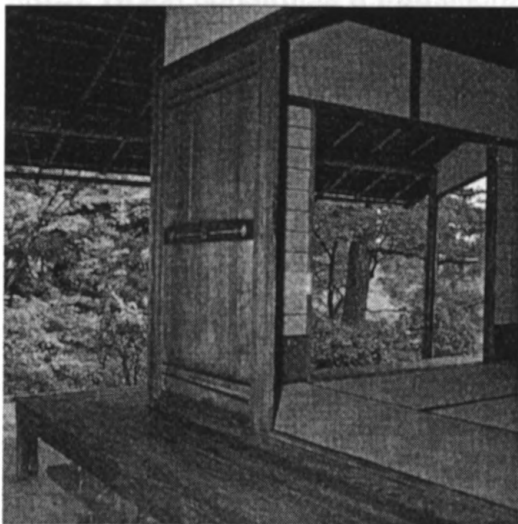
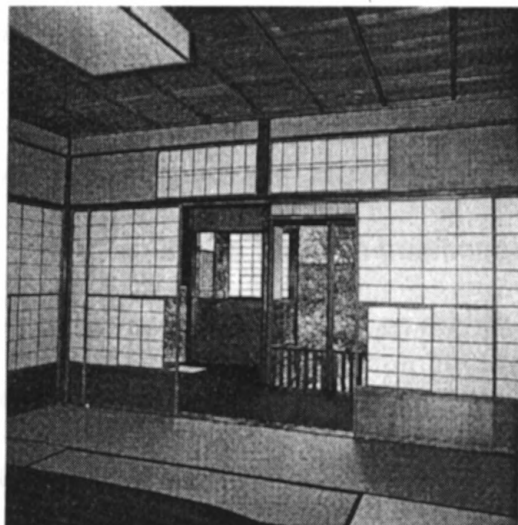
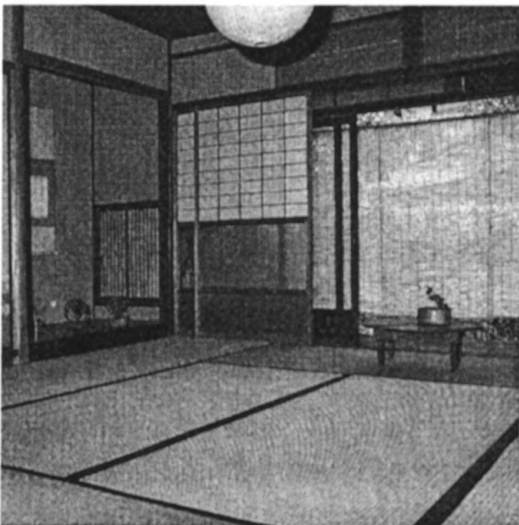
gray³². The moment, when light is in the process of extinction and darkness is emerging out of absolute emptiness (*sunyata*), the gap left between two events is perceived as moment of twilight, which manifests itself for a brief moment – a moment when both light and darkness co-exist or conversely, the moment when neither light nor darkness exist. The idea of twilight exemplifies the moment of MA, which manifests itself as emptiness.

Another character, which is read as En, becomes significant in a discussion of co-existence of contrapuntal notions – light and dark. The idea of “En” is said to be the explicit expression of the philosophy of “*sunyata*” and “*tathata*” in Japanese culture. It transpires a sense of ambiguity and pluralism indicated by MA. Interrelated to the idea of “*sunyata*”, *en* describes the moment or place, where contradictory events occur, in the process neutralize each other, and co-exist in a state of emptiness.

³² This observation is stated by Kurokawa, "... the non sensual aesthetic sense finds expression in that colorless color of numerous hues which completely cancel each other out – Rikyu gray... its contradictory elements collide with and neutralize each other, producing a state of continuity in discontinuity, a contrapuntal coexistence that disallows sensual appreciation. It is as if this blend temporarily freezes time-space, through the medium of color perception, into a two-dimensional world. And then correlating emptiness with Rikyu gray in another instance, he says, "Emptiness is not the opposite of matter or being; rather, it is nondiscriminative and nonperceptual concept of existence that signifies neither being nor nothingness. Hence, it is possible to say that it suggests the spatial dimension of the twilight color of Rikyu gray. (Kurokawa, 1988, P. 62)

EN SPACE AND TWILIGHT

En is a prevalent term in Japanese culture, which indicates an ambiguous and multi-dimensional relationship in social, philosophical, and architectural contexts. It occurs as prefix or suffix in various terms, such as *endan* (negotiations involved in locating a marriage partner) in social context, *engi* (the occurrence of a bond) in philosophical context, or in architectural terms as *engawa* (verandah type of space connecting inner and outer world), suggesting the idea of an ambiguous relationship, which accepts and denies at once.



En space, Nitschke, 1993, P. 91

In architectural terminology, *En* space acts as a transitional space, which simultaneously separates and connects outside profane world with the innermost sacred structure. It defines the vague and ambiguous border between two opposite spatial structures. In Japanese spaces, *en* space maintains a zone of semi-darkness between two distinct worlds of light (outer world) and dark (innermost space indicating the existence of *oku*). Kurokawa terms the notion of semi-darkness as *Rikyu gray*, which he acknowledges as the key concept of Japanese culture³³. *Rikyu gray* lies in between the two extremes of light and dark, first contrasting, then neutralizing or canceling each other, resulting into emptiness, which manifests as twilight.

In architectural language, two types of *En* spaces in Japanese town houses exist³⁴. *Engawa*, which is one type of *en* space found in traditional Japanese houses, is a unique feature of Japanese spaces. It is an architectural element like verandah, which runs around the house with extended eaves. It is an architectural feature of traditional Japanese houses (discussed earlier as *ie-niwa*), which constructs a transitional space, between outer world and inside of the house. Connecting the outside world (as it is open to the exterior) and inside world (extension of the structure of the house with low eaves and same floor

³³ This idea is affirmed by the observation of D. T. Suzuki, "... And there is good reason to believe this, for the physical atmosphere enveloping the whole island of Japan is characterized by a general mildness, not only climatically but meteorologically. This is mostly due to the presence of much moisture in the air. The mountains, villages, woods, etc., enwrapped in a somewhat vaporous atmosphere, have a soft atmosphere; flowers are not as a rule too richly colored, but somewhat subdued and delicate; while the spring foliage is vividly fresh. Sensitive minds brought up in an environment like this cannot fail to imbibe much of it, and with it gentleness of spirit". (Suzuki, 1959, P. 275)

³⁴ Please see previous chapter for reference

level), engawa manifests an ambiguous space, which is simultaneously exterior and interior.



Engawa depicting articulation and manipulation of light Plummer, 1995, P.137
Plummer, 1995, P 203

This en space, besides connecting exterior and interior—two contrapuntal spaces—manifests the idea of “*ku*” in terms of presence of twilight, recognized as the emptiness or MA from which light and dark emanate. The low eaves of the engawa cut off any light coming from the garden. As a result, only indirect light enters the engawa space. Light, which reaches the floor is reflected from below. The wall partitioning the engawa from the interior is usually covered with shoji panels for a large part of the surface area. Light, which is reflected from the wooden floor surface falls on the shoji screens, which re-reflect light into the en space manifesting a state of twilight. Light, after being reflected and re-reflected loses any color or warmth; residue of light reflects a state of MA. It is the idea of twilight of en space, which becomes a mediator for the light from the outside

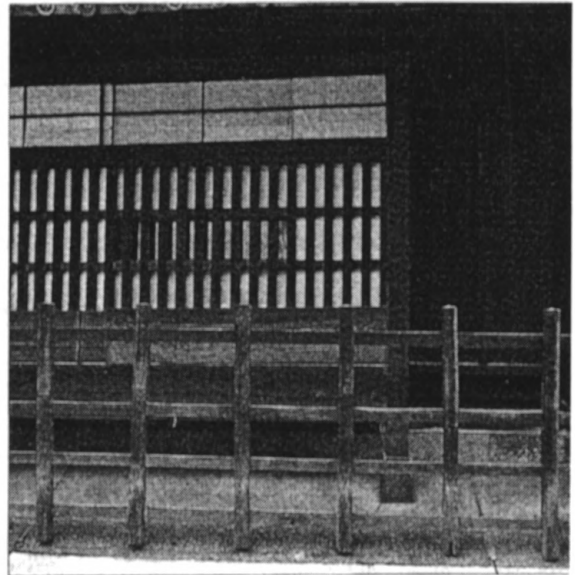
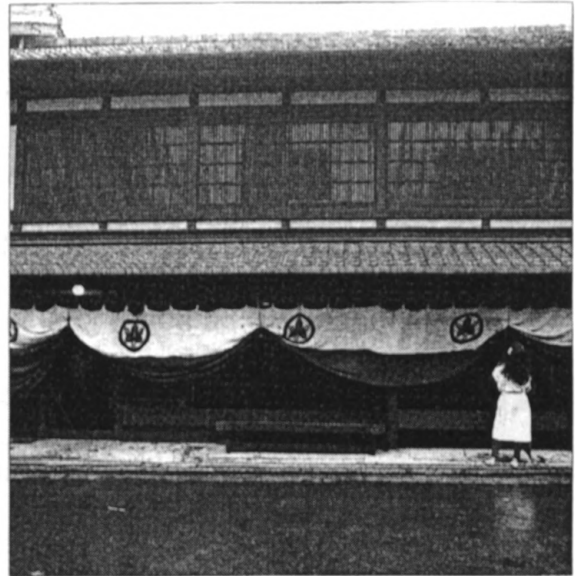
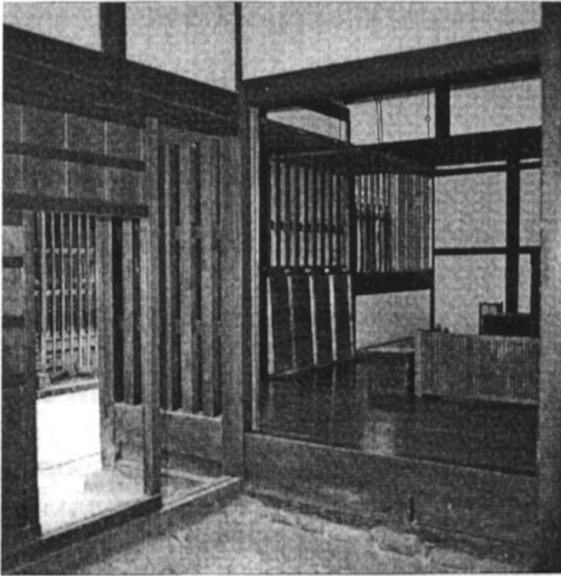
world and the deep darkness of the inner world, affirming the idea of the source, from which light and dark originate, and ultimately dissolve.

Functionally, observer is made aware of the space of twilight for a brief moment, since en space is a place to be crossed in order to enter or exit the inner space. It is a private-public realm, which is multi-dimensional, without any specific function associated with it, except for transition from inner to outer or from one room to another. This process illustrates the idea of fragmentation of space through insertion of MA. Idea of space does not remain absolute but constantly changes with human motion and perception of phenomena.

Another type of en space found in Japanese town houses is generated through layers of interceptors, which are arranged in a sequence, according to the need of regulation of light. The idea of en space is manifested in a temporal sequence rather than being spatial in nature. In the previous example also, twilight is experienced in time though en space is constantly rendered by reflected light, however observer can experience it only for a brief moment of crossing the border.

In ie-mise type of houses, building faces the street directly. In this case, MA is generated by inserting along the periphery several layers of different types of interceptors with various degrees of permeability. Shoji panels are placed in the innermost edge of the layers of interceptors, followed by solid rain shutters and then bamboo reeds. The intensity of light is controlled according to the desire of the inhabitant, though presence of shoji panels always filters the warmth of light, which has already been made feeble by sudare—demarcating

the outermost edge—making light rays neutral in color and cool in intensity³⁵. It is the closing of rain shutters (which is not infrequent for Japan has humid climate), which renders interior completely dark.



En space in ie-mise, Nitschke, 1993, P.88

³⁵ D. T. Suzuki says, "The papered shoji covering the windows admit only soft light, shutting off all the direct the sunshine, which, when it is too strong for the teamen's sensibility, is further screened by a rustic sudare hanging just outside one of the windows. P. 299

In addition, Interior walls are frequently rubbed with sand colored coating, which further deprive light of any color or intensity, if at all left. The sunrays, made feeble, die on sand-hued walls reflecting the idea of transience, which encompasses the gist of Buddhist culture.

These two types of residential spaces illustrate the significance of condition of twilight in Japanese culture. Architecture becomes an instrument to manifest the idea of emptiness generated through notion of twilight against which events of light and darkness exist. Twilight is depicted as the idea of sunyata, into which events disappear and out of which events regenerate. In line with this sequence of discussion, next section considers Japanese spatial compositions through which Shintai (union of body and mind) is made aware of the Buddhist ideology of transience and emptiness. These spatial compositions are termed as frontal composition and successive observation, which constitute a distinct architectural peculiarity of Japanese culture rendering possible translation of cultural and philosophical ideas of emptiness and temporariness into spatial constructs through elements of light and darkness.

FRONTAL COMPOSITION AND SUCCESSIVE OBSERVATION

Concept of MA, as gap between two events, manifests as a dispersive force, which fragments the space-time cognition and through a subjective depth, which forwards in time (understood as *oku*), observer links the fragmented events together in his mind.

One example of this nature was discussed in the case of approaching Okumiya in deep mountains or as Maki observes in his trip to Mita district, "If one goes along one of these lanes, one will often encounter a hidden, secret scene never imaginable from the outside³⁶". (Maki, 1979, P. 51)

Though his observation is in reference to the discovery of *oku*, it also alludes to the idea of "Here and Now", which focuses on the concept of present phenomena; rather than projecting one's mind to the future. The concept of unfolding of space in time is the idea behind composition of movement space. In order to understand interrelationships between movement space, phenomena of light, and frontal compositions, it is inevitable to first introduce the elements of movement space.

Although Japanese people could perceive and appreciate the idea of *sunyata*; nevertheless, the spatial compositions, which they conceived are not based on emptiness or void. In order to evoke the essence of emptiness, Japanese conceived space through dynamic appearance and disappearance of events. Through the ephemeral existence of events, which appeared before the observer for a brief moment, they could successively generate the idea of emptiness as the source of all events. Unfolding of successive events in a movement space conversely indicates the presence of emptiness in between the events, which renders the whole composition fragmented. It is only through human motion in time, which threads the links of the fragmented chain together. The idea behind the entire exercise remains revelation of immediate events,

³⁶ In this context, Suzuki's observation fits well, "The priceless contents must be there most genuinely, they must be there as if they were never there, they must be rather discovered accidentally". (Suzuki, 1959, P. 286)

which renders speculation of any successive event futile, unnecessary, and redundant.



Painting in which events are depicted with respect to time and are meant for successive observation. Painting is not to be seen all at once, rather it is to be viewed as a process. Inoue, 1985, P.147

The successive revelation of events has its spiritual parallel in the idea of *mujo*, idea reflecting transience or ephemeral existence³⁷. With the extinction of an event in time or space, it leads to the appearance of another successive event. In the whole process, observer is concerned or related to the perception of current event, while the event, which is over or the event, which has not yet started is not significant. It is the idea of *Shintai* being engrossed in the present

³⁷ With reference to the movement spaces, Inoue explains, "In movement space, fragmentary spaces are connected like links in a chain or beads on a string". Inoue identifies Japanese disposition towards temporariness, which has nurtured their culture; however, he acknowledges that this ideology has been expressed through "the Japanese became increasingly absorbed in what was insubstantial. Yet space did not develop in the direction of absolute "nothingness" (*kyomu*) or "emptiness" (*koKU*); rather, the intention was to create a space full of movement and change, not a boundless abyss." (Inoue, 1985, P. 170)

time, perceiving phenomena, which quickly disappears with time and yet another process begins. The cycle of extinction and generation continuously follows each other successively, indicating the presence of “*sunyata*” and “*tathata*” simultaneously. The idea of successive observation goes back to the idea of emptiness, which was discussed in the previous sections. The purpose of Buddhism being the realization of *Satori* or enlightenment in the form of the frame of mind or spirit, which mysteriously grows out of the combination of all these factors.

At this point in discussion, another design consideration becomes relevant. The dynamic composition of events are generated through two ways of design configuration. one, in which events are introduced in space as cyclical changes in the nature, such as seasons, time, day and night and so on or which is introduced as flux, such as atmospheric conditions and weather changes. The other mode of composition of dynamism in space is introduced through human motion, which perceives space as a dynamic event through his own movement in the space.

In context to the above-mentioned two design compositions, the process of manipulating the phenomena of light in traditional Japanese spaces, complementing the idea of *mujo* through successive observations, can be structured into two categories – one in relation to the space flow and another with respect to time. First, with respect to space flow in which the movement of human body (*Shintai*) induces the idea of successive appearance of events, we will discuss the process of approaching a Shinto shrine and teahouse. Next,

prior to approaching the subject of temporal manipulation of phenomena of light in the interior of Japanese room, we shall explain the frontal composition in Japanese architecture.

PERCEPTION OF PHENOMENA OF LIGHT WITH RESPECT TO SPATIAL EXPERIENCE

Entrance to a Shinto shrine is demarcated by Torii, a traditional trabeated structure. Immediately around the entrance, the space is made constricted, dark, shrouded by dense trees and vegetation, demarcating the transition from the outer world to the territory of the sacred world. Along the way to the shrine, stone path is heavily shaded by green trees on both the sides; however, space becomes more diluted.



Entrance for Shinsen-Do Shrine, Nitschke, 1993, P.36

Throughout the way to the shrine, stone path is punctuated with tiny spots of the sunlight, which have stringently made their way through dense green vegetation of the trees. These spots keep shifting and altering along with the sun's movement and vanish in a flash as soon as the sun's rays are blocked by clouds or leaves. Space seems to have been deliberately constructed to modify intangible elements of light and shadow in order to reflect the idea of *mujo*.



Sequence of shadows from a camellia tree as the sun emerges from clouds, Plummer 1995 P 377

A similar phenomenon is observed in the way to a teahouse. From the entrance to the teagarden until the visitor reaches teahouse, space becomes highly volatile, with each turn, light intensity is constantly modifying, reflecting not only design considerations but also the constant alteration in the atmospheric

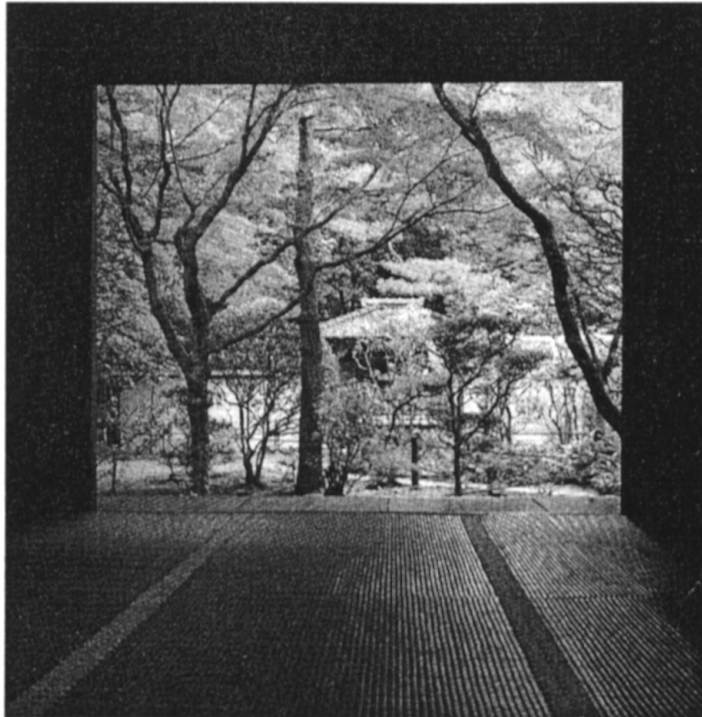
conditions. Usually the entrance to the teahouse—called nijiriguchi—is highly cramped, sometimes resembling an oculus through, which a human body can barely pass. In addition, the surrounding space is made dark, forcing the visitor to utilize all his senses to explore his way into the teahouse. This leads us to the notion of Shintai, which finds much appreciation in Japanese culture as a union of body and spirit. The idea behind generating such sensory experience is to create an awareness of Shintai. It emphasizes upon a realization of complete sensory and spiritual experiences; rather than designing and constructing for merely visual and sensual delight.



Fushinan Tea arbor, Nijiriguchi, (Nitschke, 1993, P.74)

In Japanese residential architecture types, two residential types have already been described in the previous chapter with respect to the idea of darkness as a metaphor for depth. Here, we will discuss the house-garden type of residential structure in relation with the idea of manipulating light in order to

generate and manifest idea of successive events.



Traditional Japanese space, View of the garden from inside the house,
(Plummer,1995, P.284)

In ie-niwa type of house style, visitor has to cross the garden in front of the house. Garden is designed with dense vegetation, trees, in short, nature in a miniature form. Path paved with stones, which leads to the house entrance, dictate the movement and rhythm of the visitor. The dense greenery of the garden suggests the seasonal and atmospheric conditions of the present times; the whole environment may be suggestive of fresh morning of spring or it may be dying evening of autumn. Observer is made intimate with alterations in nature and the idea of light becomes complementary in evoking the essence of spiritual values.



Engawa rendered in twilight showing interior and garden
(Plummer, 1995,P.99)

After crossing the garden, visitor encounters a space, which is perpetually rendered in twilight, which has been discussed already as *en* space. This space, which is simultaneously an exterior space while acting as an extension of interior space, is the epitome of the idea of gray space in architecture. This is the space, which combines contradictory events together and establishes a zone of

“*sunyata*”; may also be called “*tathata*”, in confirmation with the philosophy of Buddhism.

Heavy shadow of the eaves restrict any direct the sunlight to enter into the en space; light thus falls on the floor, which reflects the light back in the surrounding space. Floor, constructed in dark wood (lacquered) absorb the radiance of light, to put it precisely, dark wood extracts any color or warmth out of light. However, gleaming wood (since the wood is lacquered and polished) reflects this idea of pure light (only for the purpose of illumination as color and warmth, which could have created any drama have already been vanished) into the space. Neutral light falls on the shoji panels, which defines the boundary of the en space and interior space. Shoji panels seem to absorb into themselves and send a white glow of light into the space, thereby perfecting perpetual perception of twilight in space.



En and shoji papers, interior,
Plummer, 1995, P.137

However, the experience of state of “*sunyata*” remains a momentary experience as en space is meant to be crossed through in order to enter inside. The primary idea behind the construction of en space being signifying the idea of

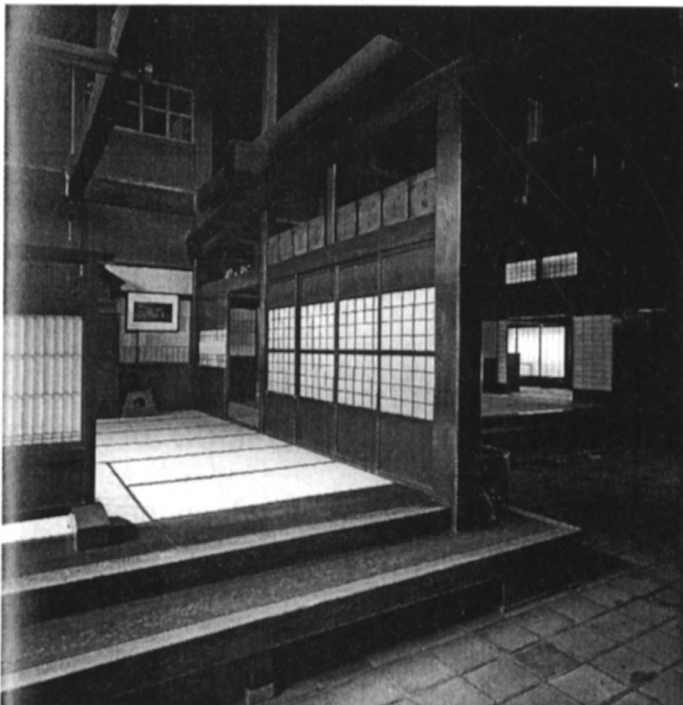
transition from outer profane world to the sacred microcosm demarcated by vague and ambiguous delineations of en space and shoji screens.

Shoji paper panels perform two functions through which light is modulated. One is that they pick up bits and pieces of light, whatever is available after being cut off by the dense green garden and en space and second is that they modulate the intensity of light. Light becomes soft losing all the heat and redness of the sun. It acquires a green tinge from the garden, which, however, becomes negligible when light undergoes rigorous reflections and diffusion. Shoji panels perform two opposing functions-one is absorbing light and another is negating light. It, therefore, signifies the ambiguity prevalent in the structure of Japanese spaces. Interior of the house is rendered in shades of light, which we have already discussed in the previous chapter. The periphery of the room, where shoji screens emanate pure idea of light, is the most illuminated space in the interior. The white glow gradually gets dimmer as light flows inside; in fact, the white glow of shoji screens does not spread light. Light falling on shoji does no more than accentuate the white glow of shoji panels³⁸; rather than attributing shoji panels as light source. The deep interiors of the room increasingly get darker and darker.

Alcove, which is called tokonoma, is a niche in the interior of the room. It may be an empty space or may contain some object of aesthetic value with respect to Buddhist ideas of wabi or sabi. Whether tokonoma is empty or

³⁸ Tanizaki observes, "The little sunlight from the garden that manages to make its way beneath the eaves and through the corridors has by then lost its power to illuminate, seems drained of the complexion of life. It can do no more than accentuate the whiteness of the paper". (Tanizaki, 1991 P. 35)

contains something, the idea remains the same; the depth of alcove is engulfed in darkness. It is difficult to outline the profile of the objects placed inside or even along the edges of the alcove. The idea of alcove signifies the presence of *oku* in the interiors of Japanese house; while remaining empty, the presence of darkness endows emptiness with a mysterious depth, which cannot be comprehended³⁹.



Picture of a monochromatic rendering of a traditional Japanese house (Plummer, 1995, P.89)

Tanizaki observes that the renderings of interior as an ink wash painting where the ink is thinnest where shoji is thick where the alcove is. The soft glow of light emanating from the shoji panels is the only light source for the interior of the space. Somewhere in between the room, this soft light and darkness of the depth of the interior intercross, creates a zone of neutral space--a state of "*sunyata*". The whole interior is punctuated with different renderings of light with

³⁹ refer the note of mysterious darkness in the previous chapter

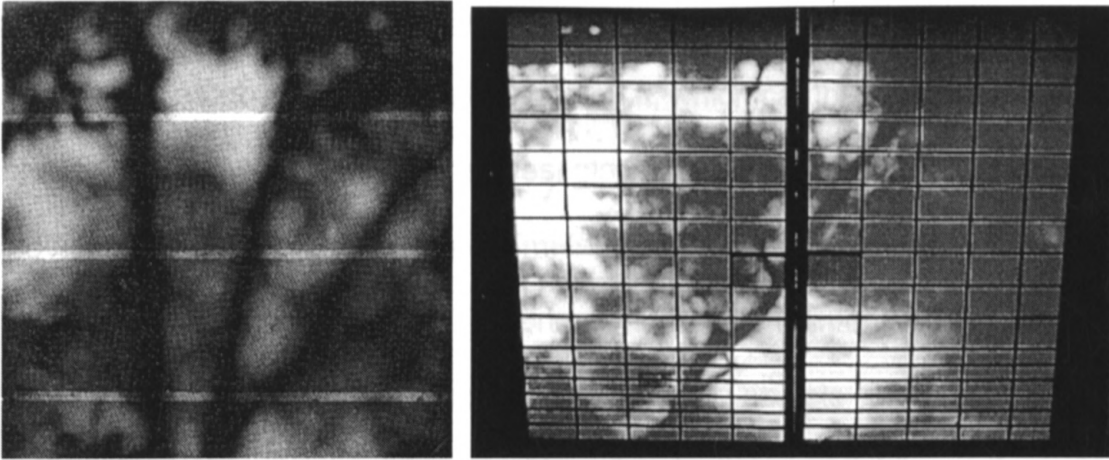
varying intensities, introducing fragmentation of space through the phenomenon of light. Tanizaki observes,

“The light from the pale white paper, powerless to dispel the heavy darkness of the alcove, is instead repelled by the darkness, creating a world of confusion where dark and light are indistinguishable”. (Tanizaki, 1991, P.35)

Having discussed the successive observation of phenomena of light and dark through human movement in sequence of spaces, next subject of discussion concentrates on observation of phenomena of light within a temporal arrangement. Within this topic, in the next section, we will discuss the concept of frontal composition and intentions behind such a design configuration in traditional Japanese interior.

FRONTAL COMPOSITION

Interior of a Japanese room is best appreciated through a frontal perception of the surfaces. The idea of moving around in the room and viewing architecture as a sculptural piece is far removed from the passive appreciation of captured aspects of phenomena of existence on the walls (on shoji screens) or beyond the confinement of the room (in the form of borrowed scenery, known as “shakkei”). When guest enters the room, he does not sit facing the tokonoma, which is considered the niche containing prized selection of articles or scroll paintings. Guest either faces shoji screens in a frontal position or faces the garden across the engawa, which he has just crossed.



Projection of light and shadow on wall and shoji surfaces
Plummer, 1995, P.275 (left), Plummer, 1995, P.349 (right)

In traditional Japanese architecture, rays of light and shadows are projected on to the screens of walls or shoji panels, which act as projection screens in order for observer to make aware of the ephemeral phenomena illustrated by intangible events such as light and shadow. It is essential that these screens be perpendicular to the line of vision of the observer so that events can be seen distinctly. Idea of frontal composition arises from the idea of successive observation through which observer can view phenomena on a plane perpendicular to his line of vision. While approaching, the front of a traditional building frequently appears as a two-dimensional plane to the observer. In the Interior of the building, the walls are composed independent of the adjacent walls, with the idea in mind that each wall will be observed individually and sequentially, and not in perspective⁴⁰.

⁴⁰ This composition finds its parallel in Isozaki's observation that Japanese spaces are two-dimensional facets through which two or more time scale runs.

Shoji panels, made of translucent rice papers, intercept light and the shadows of nearby objects are projected on it, which can be seen from the inside of a house. Shoji screens, themselves, glow with whiteness while the ethereal glow maintains a state of existence (materiality) and non-existence (immateriality) simultaneously. The primary idea behind intercepting light on shoji panels and delineating shadows of the nearby objects is the idea reflecting notion of ephemeral existence or an idea of projecting non-existence through existence, which is in line with the Buddhist idea of A is non-A⁴¹. Shadows projected on shoji screens simultaneously accept and deny existence since they do not manifest any material existence, however their presence cannot be denied. The idea that shadows do not have any tangible existence; they may disappear in an instant, projects and affirms belief in the Buddhist ideology of mujo.

The interior of a Japanese room is layered with interceptors with an idea in mind that any form of direct the sunlight is denied, maintaining a world of confusion through continued presence of amalgam of light and dark. Despite such considerations, once in a while a ray of light manages to penetrate inside, especially, when the sun is low—in the evening or early morning. However, the ray of light, by the time, it reaches interior, has lost much of its energy and vigor and is nothing more than in a dying state. Tanizaki comments on Japanese aesthetic, which delights in the observation of such ephemeral events,

⁴¹ Buddhist philosophy follows that being and non-being exist simultaneously in a state of sunyata.

"We delight in the mere sight of the delicate glow of fading rays clinging to the surface of a dusky wall, there to live out what little life remains to them". (Tanizaki, 1991, P.31)

Since, the observation of phenomena with respect to the parameter of time is of much significance, hence a frontal composition, which renders perception of such events possible to the observer, has been a constant design consideration in traditional Japanese architecture.

The two spatial configurations, namely, frontal composition and movement space generate conditions, which render possible perception of concepts of MA and sunyata, manifested through manipulation of phenomena of light and dark. Within this context, phenomena of light and dark transcend functional aspect of illumination but serve to generate greater meanings of culture and communication of existential meanings.

Having discussed the basic ideas and philosophies in western and Japanese culture, which manipulate the introduction of light into space and articulate space, next step is to analyze Ando's architecture in light of above discussion. For this purpose, Church of the Light, built in 1989 has been selected, which is located in a quiet residential neighborhood in a suburb of Osaka. It is an addition to an existing church and pastor's house.

As the name suggests, building is a chapel, located in Ibaraki, Osaka. In this building, Ando attempts to explore the possibilities and dimensions of a sacred space through the elements of light and darkness.

Prior to initiating the analysis, it is desirable to quote Ando's intentions in the conception of sacred spaces,

"... I have thought about sacred space. The question I asked myself was what is sacred space to me. In the West, a sacred space is transcendental. However, I believe that a sacred space must be related in some way to nature. ... For me the nature that a sacred space must relate to is a man-made nature, or rather an architecturalized nature. I believe that when greenery, water, light or wind is abstracted from nature-as-is according to man's will, it approaches the sacred. The Church of the Light, ... , represents an effort to architecturalize or abstract in the above sense the natural element of light". (Ando, 1995, P.455)

This quote suggests the appropriateness of Church of the Light as the case study for our purpose, since the theme of light has been pursued throughout the spatial structure in order to approach the idea of sanctity, which characterizes the intention of the space. Analysis of the building will not only inform us of the intentions achieved by Ando but also the methodology through which they have been achieved.

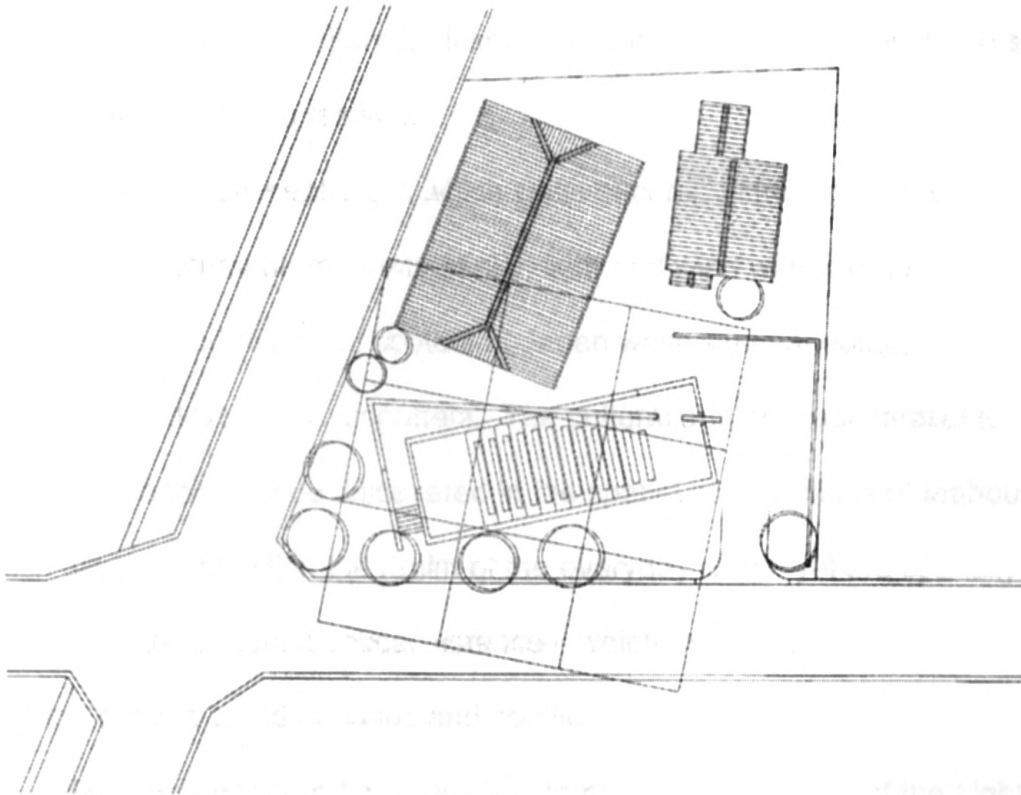
Case study is structured into four categories of analyzing schemes, which successively explore each dimension of spatial experience inherent in the composition. The degree of subjective analysis increases with each category, the first category, which is Orientation and geometry, being purely objective in nature. Within this parameter, configuration of the spatial structure based on the orientation and geometry of the building and openings have been considered. Openings and the building orientation are analyzed through The sun path drawings for three distinct days in a year – Winter solstice, summer solstice, and equinox. In addition, three different times in a day have also been considered – early in the morning (around 7-8 am), noon, and evening (around 4-6 pm). These time periods have been determined based on the movement of the sun, during which the sunlight and the sun angle change dramatically. In addition, computer-generated three-dimensional drawings have been constructed in order to confirm the above findings and also, for a better understanding of the behavior of the sun in the interiors.

Second point of analysis is form and materials, which have been analyzed based on photographic images, interpretations derived from an interaction of geometry, materials and orientation with light, and interpretation through personal visit to some of Ando's buildings, in which he has employed similar construction of concrete and glass. Concrete, suspended between notion of materiality and immateriality renders the analysis of this category partly subjective in nature, which to some extent depends upon the movement and perception of Shintai.

Third and fourth points of analysis are based on the experiences generated through the syntax of the geometry, orientation, materials, and light. This part of analysis considers subjective aspects since it examines the spatial experience as a whole, which evolves from animation by light and human movement in the space. In order to understand the spatial structure and experience generated through peripatetic observer, it is essential to consider logical combination of findings of the above two categories. Behavior of The sunlight and the sun angles on sequence of spaces have been gathered through a combination of the sun path drawings, superimposition of the sun path drawings on spatial structure both as parts and as a whole. In addition, movements of Shintai have been traced through the spatial structure and the impacts generated on the experience of Shintai have been analyzed through both analytical 2-d drawings and computer generated 3-d drawings.

In consideration to the above-mentioned process of analysis, in the next chapter, we shall explore the proposed intentions of the thesis, which attempts to identify the oriental and occidental influences of ideas of light and darkness in Ando's architecture. The analysis will eventually lead to a comprehensive understanding of light as a means to achieve not only integration of the ideologies of the two cultures, but also deeper significance to generate and communicate existential meanings, which have long nourished cultural and historical foundation of Japan.

CHURCH OF THE LIGHT
ORIENTATION AND GEOMETRY
CRITICAL CONTEXTUALISM



Site Plan, Church of the Light, Drew, 1996, P.56

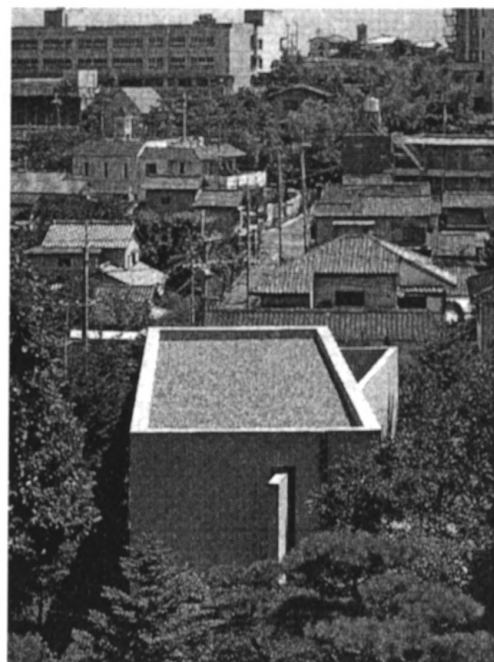
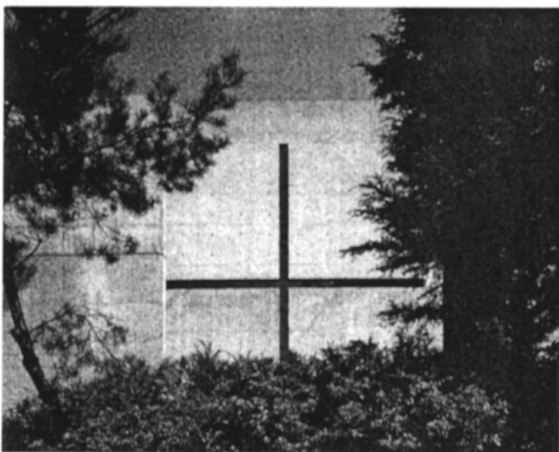


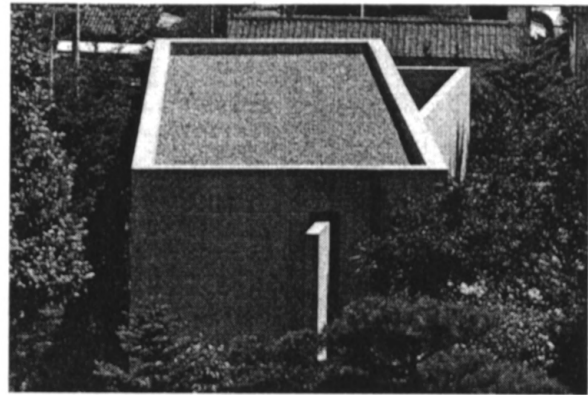
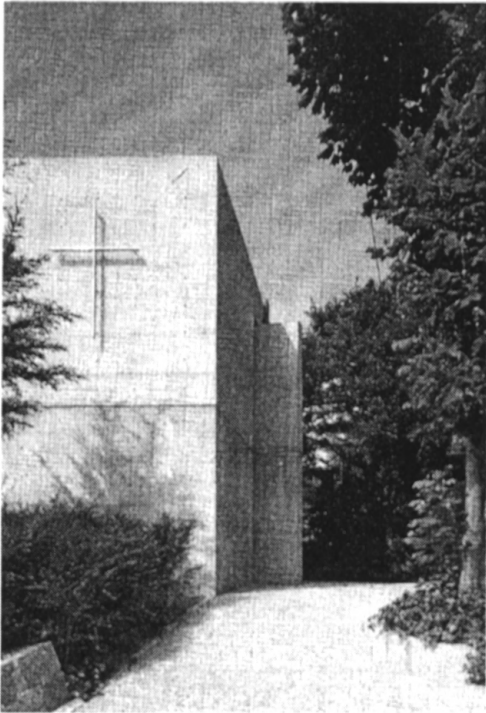
Figure 1, 2 representing the city context,
(Slessor, 2000, P.57)

Church of the Light represents Ando's determination to wedge spiritual domain within the chaotic context of a contemporary Japanese city. Mute, yet sturdy walls resist and challenge the presence of fragmented nature, visual saturation and transient pleasures of the suburban neighborhood, while at the same time, delineate territory for inserting spiritual microcosm within the same context, which is being resisted.

Territorial delineation, in which walls become active agents, selectively includes the natural phenomena of sky, light and wind within and situates Chapel in the cultural and historical context of Japan while simultaneously rejecting the conflicting context, which city offers. The cultural and spiritual parallel to this design approach, can be discovered in the spatial compositions of teahouses, which are present within the realm of the everyday world, yet are spatially configured to maintain a critical distance—which may be subjective in nature—from the outside world of chaos and conflict.

The introverted and cocoon-like structure of the Church of the Light delineates a human zone, which renders possible an integrated process of natural phenomena, such as light, sky and wind, and human beings to co-exist within the bounds of modernism.

GEOMETRY

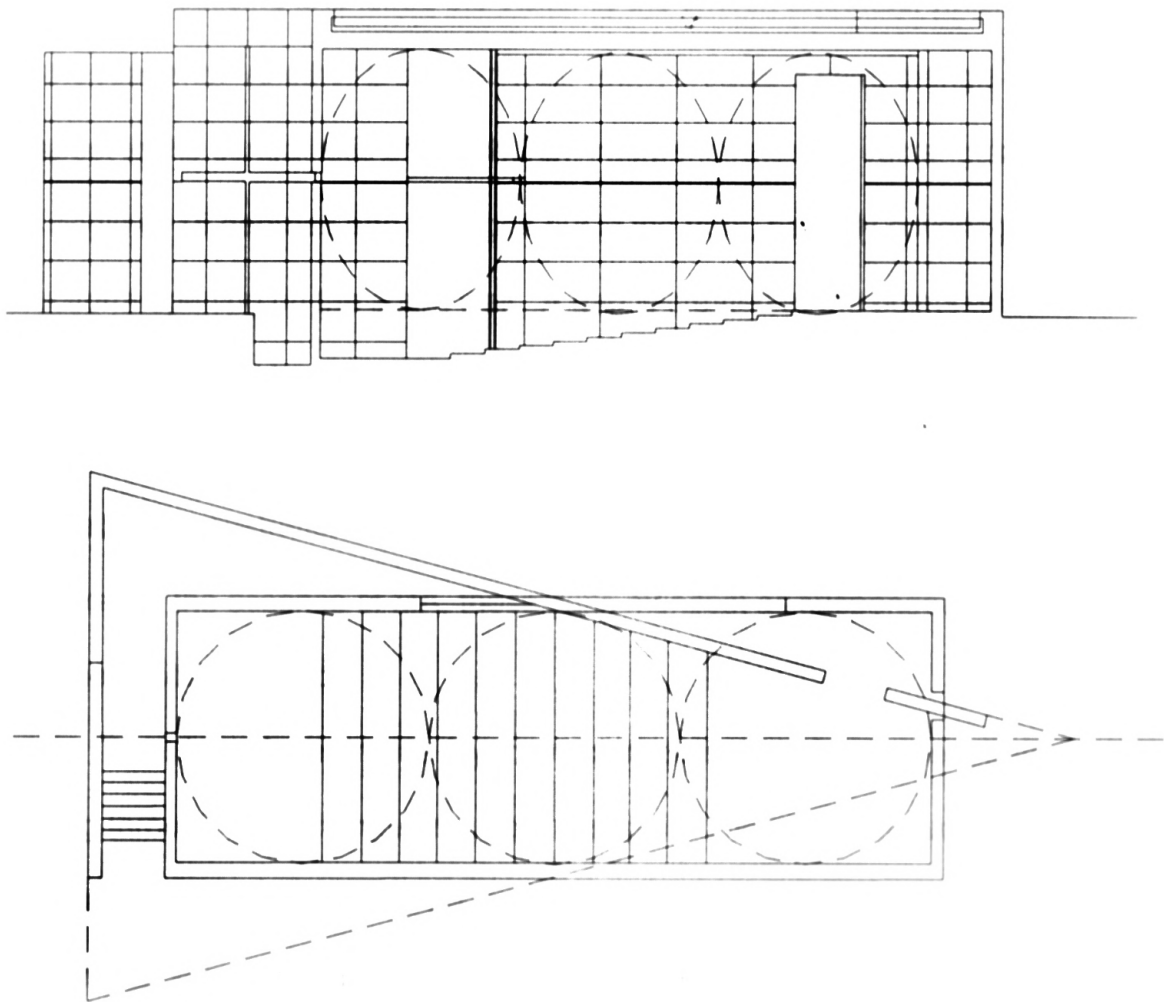


Rear view of the church
Drew, 1996, P.40

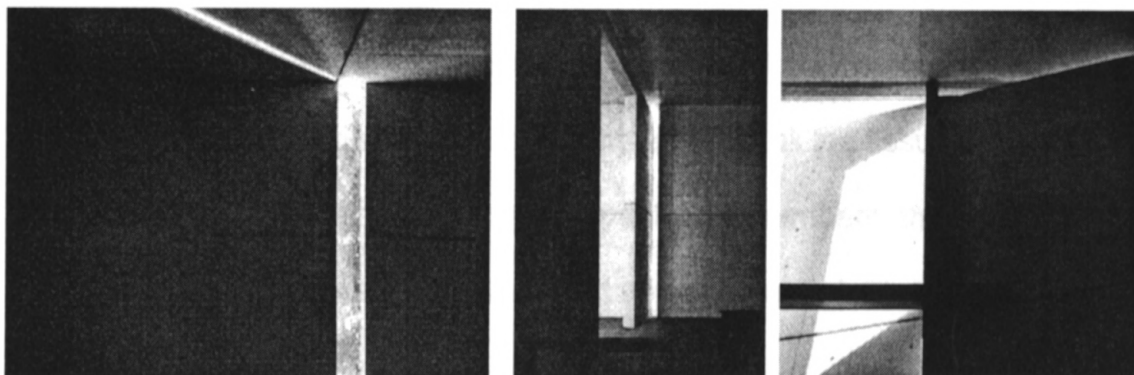
East side view of the church
Drew, 1996, P.40

The church exterior erected as a rectangular cuboid is composed of four walls, which encapsulates spiritual domain within its territory through rigorous and ingenious devising of the introduction and articulation of light within the delineated space. These blank walls engage the observer by generating curiosity, followed by an idea of subjective depth evoked by non-suggestive or non-referential characteristics of the walls. The church, which has an occidental origin, is removed from any reference to the idea of domination and verticality in the exterior; nevertheless, the sacred nature of the building transpires through the cruciform opening on the wall, which faces the street. The deep darkness of the cruciform opening against a background of fair-faced concrete surface,

achieves a characteristic of the idea of Oku, which appears to be enveloped and secured within the enclosing walls.



Plan and longitudinal section of the Church. Dotted lines distinguish the intrinsic geometry of the structure.



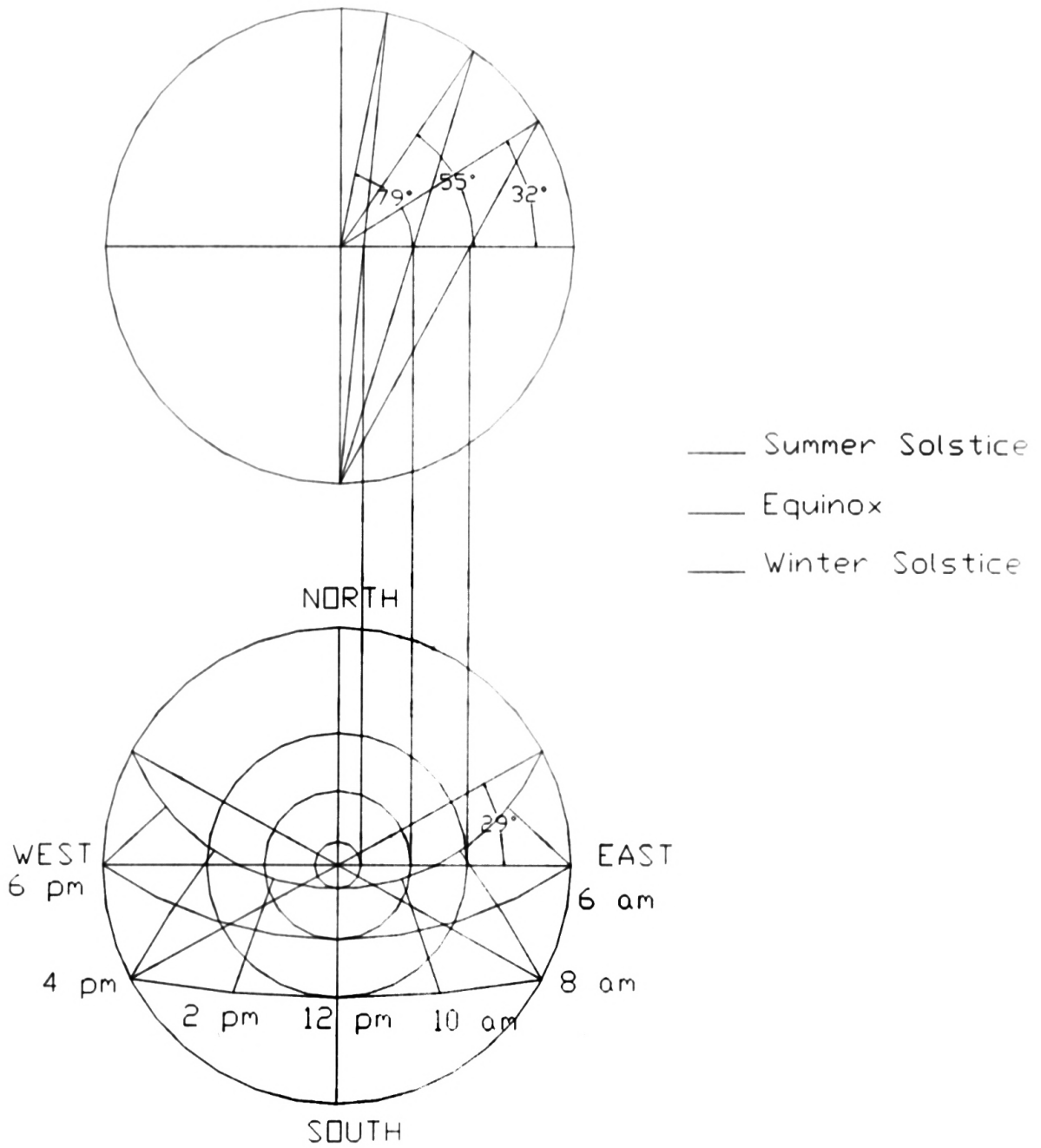
Light seeping through the gaps (Drew, 1996, P 44-47)

The principle body of the Church consists of a rectangular volume, which is composed of triple cubes, placed in a sequence. An L-shaped wall surrounds the Church building and leads the visitor to the church entrance, which is created at the rear end. Another L-shaped wall, which creates a semi-triangle with respect to the central axis of the church, interpenetrates the rectangular cuboid at an angle of 15 degrees and emerges out in the front, partially covering the cruciform opening on the south wall. A gap is created at the points where the cuboid is ruptured by the penetrating wall. These gaps not only establish a clear geometric form by accentuating the planar composition of the structure, but also facilitate the penetration and percolation of natural elements through them. Generating the essence of MA, these gaps manifest as suspended moments between solid and void.

The triangular entrance foyer, which is delineated by the penetrating wall cutting through the rectangular cuboid at a sharp angle of 15 degrees, leads into the main sanctuary. There is no opening on the east wall. The openings inside the Church seem to erupt out of a geometrical operation through which the original volume of an enclosed cuboid is fragmented into a planar composition. Light percolates inside through the gap between the planes along the ceiling, in the walls and between the walls. Except for the cruciform opening on the south wall, which appears to be autonomous in nature, rest all the fissures are generated out of geometric operations. Speaking in numbers, there are five openings in total, however, each bearing distinct characteristics of degrees of

permeation and the interception of light. Before dealing with individual openings and their characteristics, it is essential to consider the sun path data in the Osaka region and the orientation of the Church building with respect to the site conditions and the sun path. In the next section, we will analyze the sun path for the Osaka region and the placement of the Church in relation to the sun movement.

THE SUN PATH DIAGRAM FOR THE OSAKA REGION



The sun path diagram illustrates the sun's movement in the vaulted path of the sky at three distinct times of the year. The lower circle traces the sun path from the time of the sunrise to the sunset, with indications of approximate time divisions. The upper circle projects down the angle of elevation on the lower circle, described by the sun at noon, which is the highest angle on any given day. By connecting the three positions of the sun in the sky – azimuth of the sunrise and the sunset and the altitude of the sun at solar noon – The sun path for the Osaka region is traced.

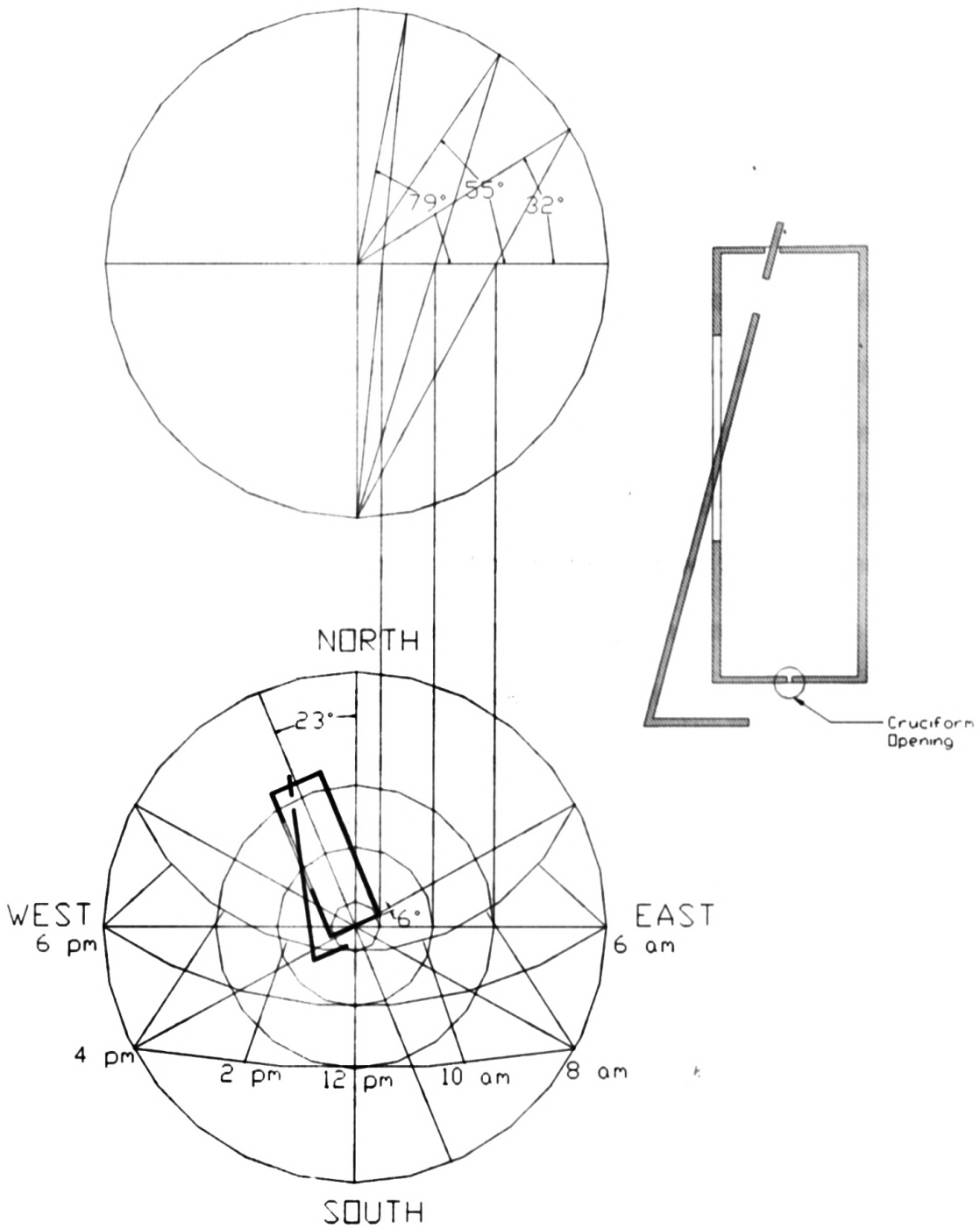
The upper arc on the lower circle represents the sun path on the summer solstice. It shows that on summer solstice, the sun rises 29 degrees due north and sets 29 degrees due north. The altitude of the sun remains high and at solar noon, the altitude is 79 degrees high.

The lower arc on the lower circle represents the sun path on winter solstice. The sun remains at a low angle throughout the day reaching an altitude of 32 degrees at solar noon. The sun rises 29 degrees due south and sets 29 degrees due south.

The central arc on the lower circle represents the sun path during equinox. The sun rises due east and sets due west while reaching an altitude of 55 degrees at solar noon.

Having been acquainted with the sun path diagram for Osaka, the next step is to situate the church within this picture and analyze the impact of this orientation.

PLACEMENT OF CHURCH OF THE LIGHT WITH RESPECT TO THE SUN PATH

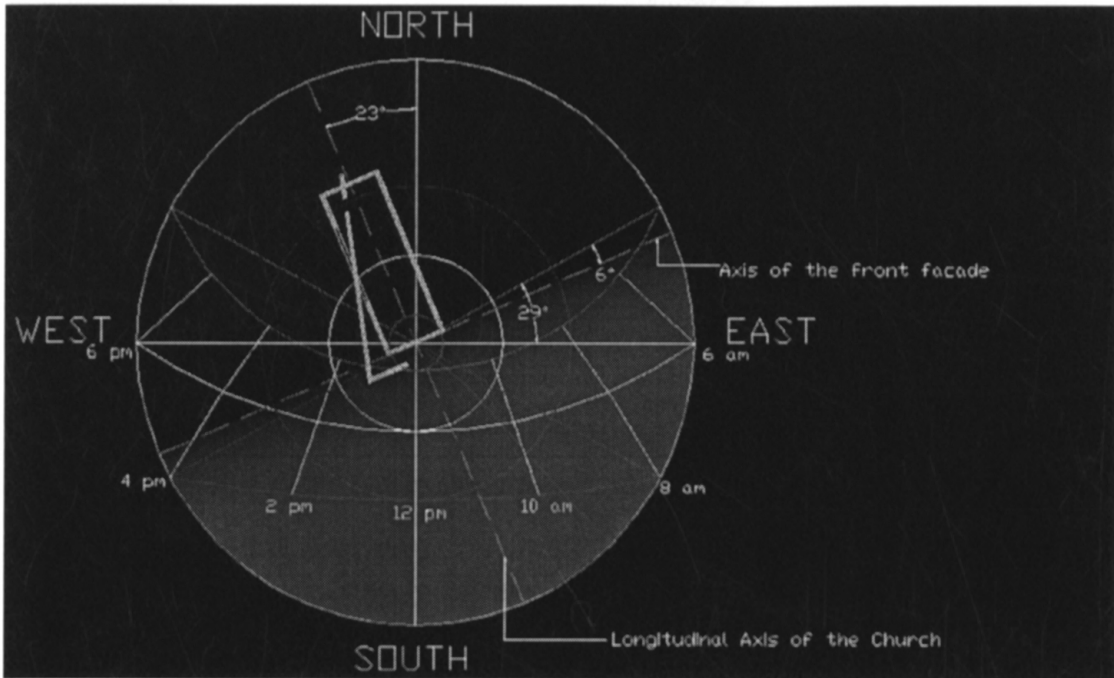


The principle axis of the rectangular cuboid maintains an angle of 23 degrees with the North – South axis, which positions the cruciform opening slightly towards the southeast direction. The placement of the Church, within this context is highly unconventional, since traditionally, western churches are oriented along an East -West axis, in which the altar is placed in the east symbolizing the presence of the Divinity in the form of light, and nave, which is oriented towards the altar, directing the believer from west to east. In addition, the axial placement of the Church along the east west axis signifies the eternal path of The sun, symbolizing the church as a microcosm in the greater realm.

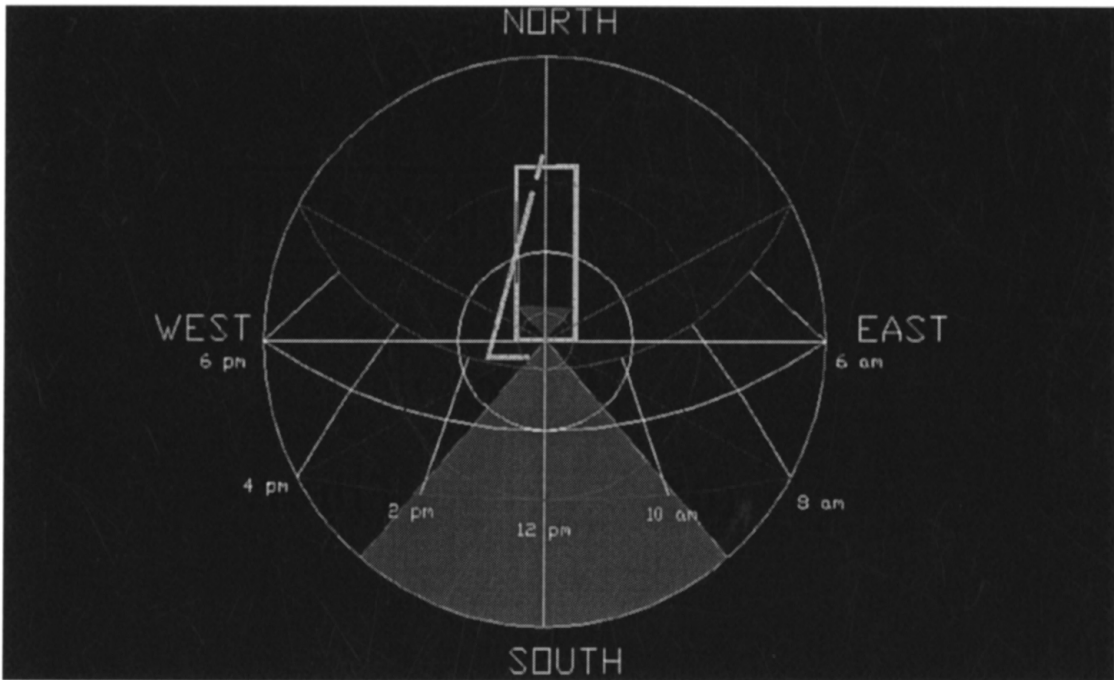
It can be argued that limitations of the site encouraged the idea of adopting an alternative orientation; however, the argument weakens with the discovery that the rectangular cuboid neither follows the alignment of the site boundaries nor the edges of existing buildings on the site, which could have counted for a rational approach based on the site constraints. The ambiguity of the situation will be discussed in detail later in the section of the cruciform opening. However, at this point, it is sufficient to mention that the primary idea behind the inclination angle of the building with respect to the cardinal axes can be discovered in the Japanese idea of acknowledging the sun as a phenomena; rather than identifying the idea of the sun as the divine object.

Following this logic, the longitudinal axis, which is the primary axis of the Church, describes an angle of 23 degrees with the North-South axis, which closely aligns the southeast facade with the azimuth of the sunrise during the

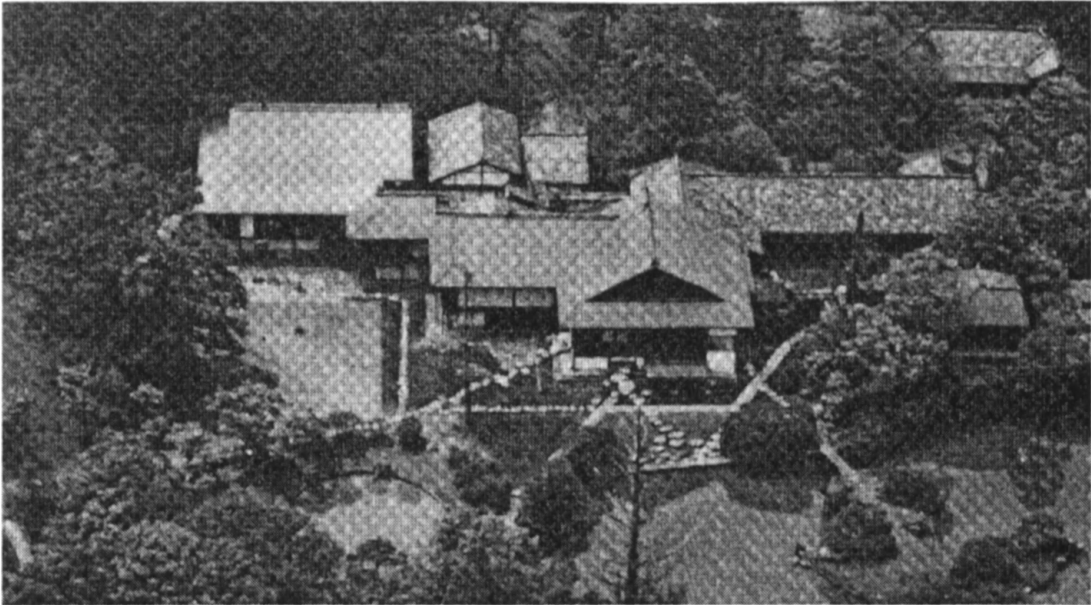
summer solstice. The idea behind this inclination angle is to optimize the interpenetration and utilization of the sunlight during daytime.



Cruciform opening is aligned with the sunrise on summer solstice



Compared to the above diagram, this diagram illustrates the symmetry if the church is placed along cardinal axes.



Katsura Villa, Aerial view, (Maki, 1979, P.56)

The idea of ensuring maximum permeation of the sunlight during the daytime through south orientation can be cited in the flying geese pattern planning of the main shoins of Katsura Imperial Villa, in which shoins are oriented towards the south. The south orientation of the shoins ensures permeation of the sunlight for an optimum duration in a day. However, at the same time, modes of refining and modulating the sunlight through specific devising such as engawa and shoji panels regulate the permeation and penetration of the sunlight into the interiors. This characteristic ambiguity of Japanese spaces, which suspends between the idea of simultaneously admitting and rejecting light, finds its cultural and spiritual parallel in the notion of “*mu*” or nothingness, which achieves its architectural expression through the concept of *en* space.

The cruciform opening on the southeast wall of the Church symbolizes double theme through its mere shape and presence. It appears as the single

mode of any dialogical relationship between the viewer outside and the hint of the interior world. In addition, cruciform shape establishes the idea of communicating the character of the building. However, the idea of communication maintains an ambiguous character since, the symbol of cross is negated in its material form. Besides the cruciform opening, no other opening exists in the immediate line of sight. The east wall does not contain any opening, while the west and north walls are not perceivable from the street.

In order to analyze the introduction and manipulation of light in the interior of the Chapel, it is inevitable to consider precise placement and size of the openings⁴² with respect to their orientation and geometry. In the following sections, each and every opening will be analyzed in detail; however, presently we will identify the placement and orientation of the openings.

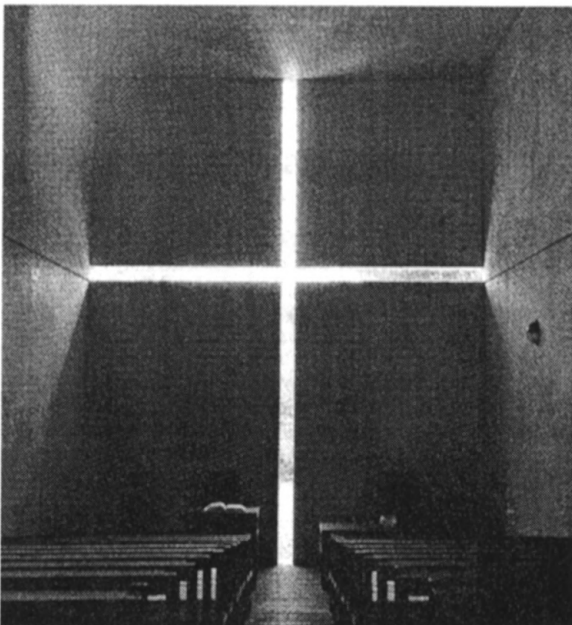
The wall, which slices through the chapel at a sharp angle of 15 degrees, rips apart each and every plane through which it makes its way across the interior. In the process, two huge lengthwise openings are created on the west wall of the rectangular cuboid, engendering two triangular spaces, one of which remains open to sky (**side opening**) and the other one forms the entrance foyer (**entrance opening**) on the northwest corner. The wall, further penetrates the rear wall and creates two slit openings (**rear openings**), one on each side. The wall remains 18 cm below the ceiling of the rectangular cuboid, establishing its

⁴²The idea is stated by Ando -... To allow architecture to come into being adequately as space it is important to consider the kinds, numbers, and sizes of openings and the air and light that will flow through them in relation to volumes. (Ando, 1980, P.43)

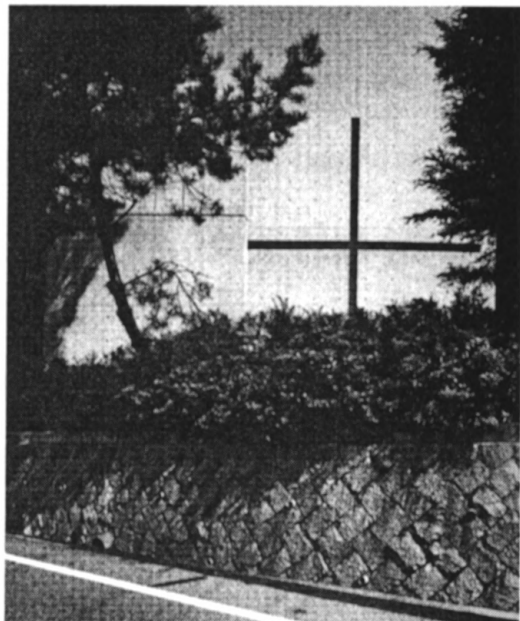
own individuality in the geometrical composition of the Church and generates a **ceiling opening** throughout its length in the interior of the Chapel.

It is observed that no opening exists on the east wall of the rectangular cuboid and all the openings are concentrated on the south, west and north walls. Geometry of these openings with respect to their orientation and placement will be analyzed in detail in the following section.

The huge opening in the form of a cross, symbolizing the sacred nature of the building, is delineated on the south wall of the Chapel. Geometrically, the opening is built of two incisions made at right angles. The width of the incisions is 20 cm and the two arms of the cross extend across the length and height of the wall. This wall is closely aligned with the azimuth of the sunrise during summer solstice.

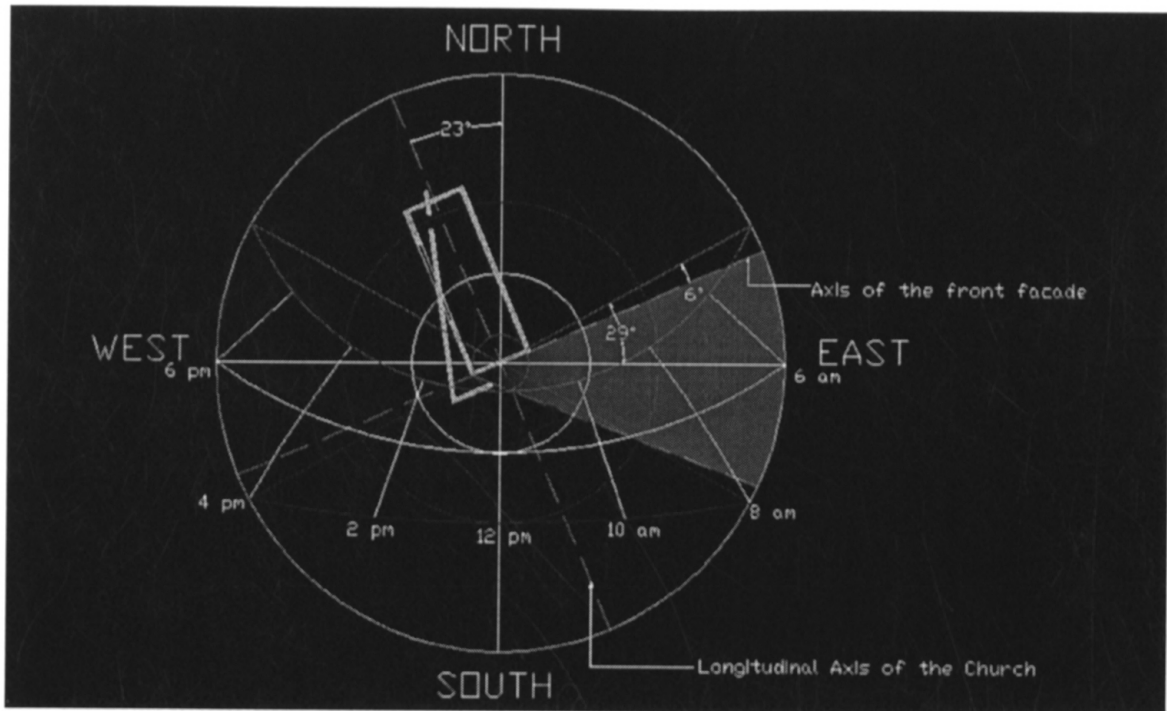


Interior and exterior view of the cruciform opening
(Ando, 1995, P. 455)



(Ando, 1995, P.318)

IDEA of SPACE AS A PHENOMENON



Duration, when the sunlight penetrates through cruciform opening, without being blocked by the wall in front

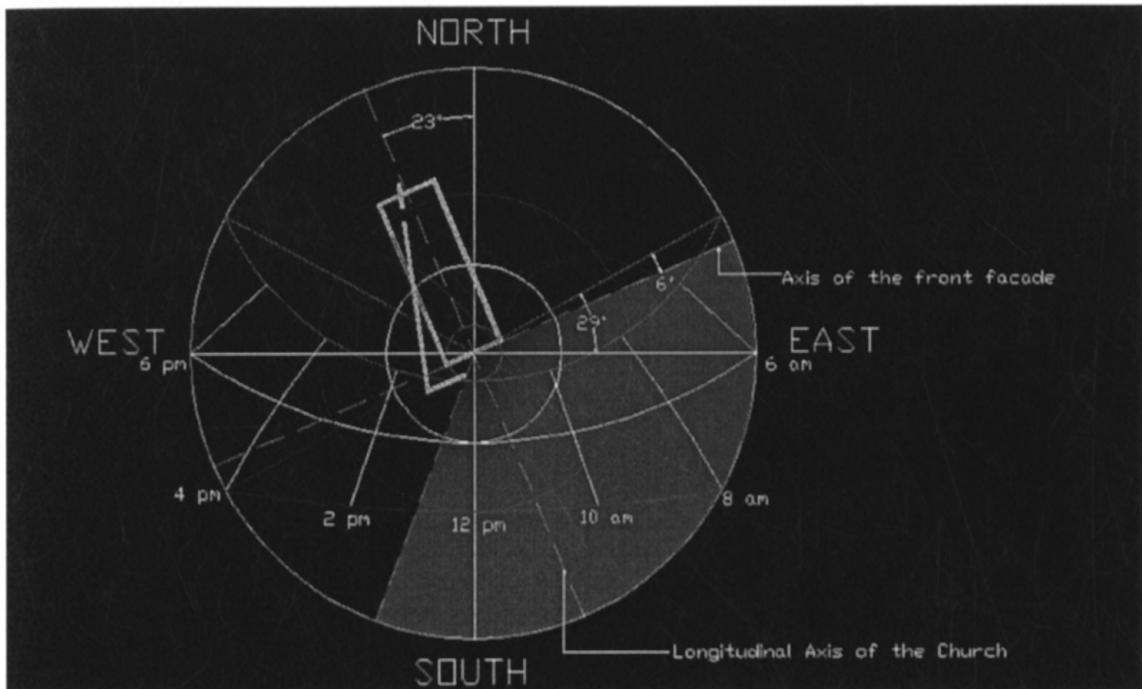
With respect to the alignment of the wall, the cruciform opening closely falls in line with the azimuth of the sunrise and consequently, begins to receive the sunlight immediately as the sun rises in the horizon. Therefore, the south end, being the altar of the Chapel, is illuminated by the morning light, which manages to seep inside through the cruciform opening. This design approach although lacking the symbolism inherent in the idea of an east-west orientation of the western Church; on the contrary, demonstrates a practical approach to trap the sunlight in order to generate meaning in the space. This alignment clearly indicates the principle of design ideology being accepting and integrating light as a phenomena of the sun; rather than acknowledging and symbolizing the sun as

divine, without any meaningful relationship with the reality. The inspiration behind the whole operation is to generate interaction with the idea, evoking a realization within human mind through an actual experience of the reality, by being in the reality and not through a mere symbolic representation of the idea.

In the Church interior, the cruciform opening symbolizes the presence of the Cross and altar is located in front of the opening. The opening becomes a brilliant manifestation of the essence of Christianity as light itself becomes an embodiment of the divine symbol. Owing to the placement and orientation of the opening on the wall, within the church interior, the cross retains its bright glow throughout the day. This is in line with the idea of the absolute manifestation of the cosmic order and divinity in a western space. The cruciform opening stands as an embodiment of divinity within the Church interior, signifying the permeation of God in the space.

However, the apparent resemblance of the cross of light to western reference weakens as evening approaches. The wall, which partially envelops the cruciform opening, at its west end, begins to obstruct the sunlight. The presence of a wall contradicts the very essence of the orientation, which is maintained to receive the sunlight for an optimum period of time in the morning. The absence of the wall would have better served the purpose of manifesting an eternal and absolute image of cross. Within this context, the wall creates an ambiguous meaning, which destroying the idea of an absolute cross of light. This seems to achieve no purpose whatsoever, the wall appears to be a mere hindrance in achieving the goal of ideal Christian space.

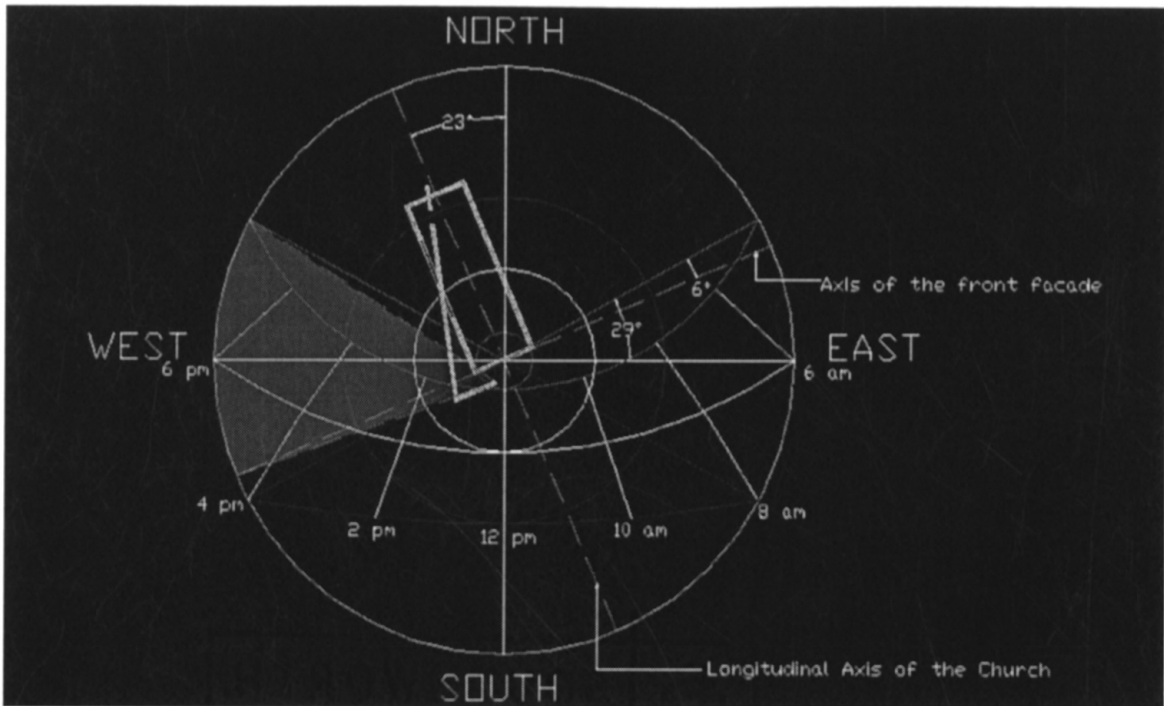
This ambiguity in design approach can be explained through the Japanese idea of acknowledging space as phenomena and not a symbolic object or the manifestation of abstract ideas.



The sunlight being blocked by the wall in the front around noon

As explained earlier, the opening is aligned with the azimuth of the sunrise in order to pick up the slightest tinge of morning light. The green vegetation, which surrounds the south east corner of the Church, refines and distills the morning light and pours it inside through the cruciform opening. The light is soft, fresh, and slight, resembling the freshness of a newly born.

With the increasing altitude of the sun and continuous shift towards west along the south sky, the sunlight, which is penetrating through the cruciform opening, begins to cut the interior space like a blade of light. At noon, the cross acquires fully mature form of the embodiment of divine light.



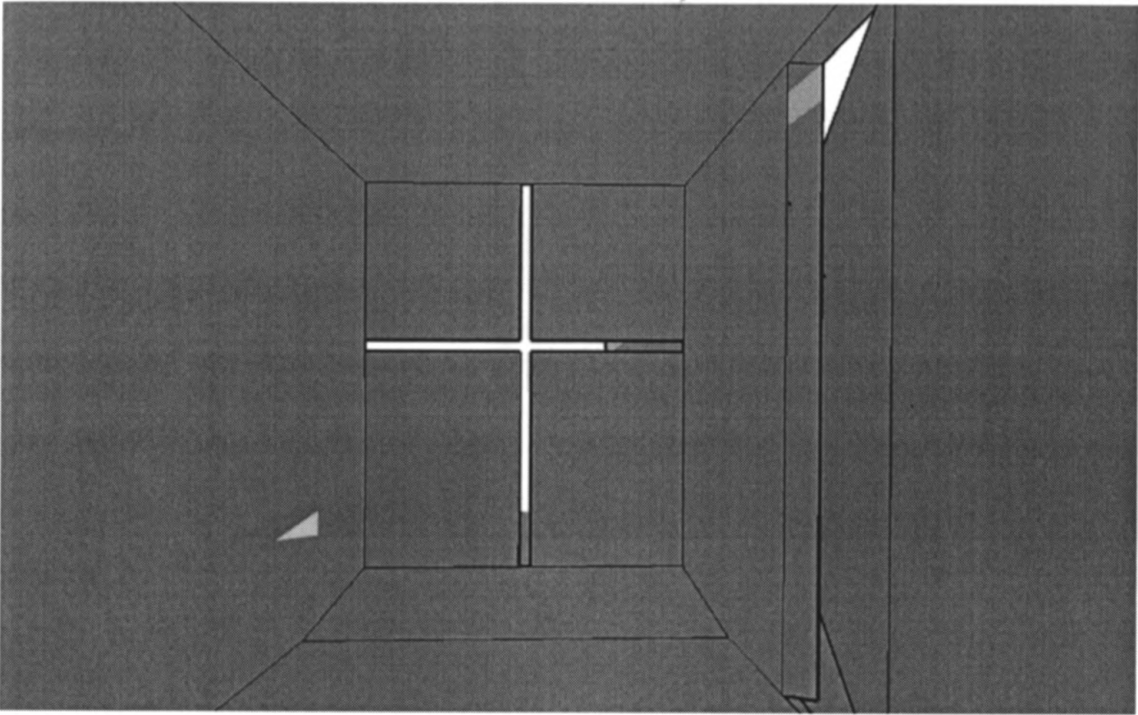
Light, received by the inner surface of the wall, which is reflected inside through cruciform opening

However, the phenomenon is not eternal. The cross of light is continuously acquiring new form with the ever-changing movement of the sun along the vaulted path in the sky. At one point in time, the sun crosses the alignment of the wall and slides behind the opening. In absence of the enveloping wall in front of the cruciform opening, at this moment, indirect light reflecting from the south sky would have remained the only source of illumination for the cruciform opening. Nevertheless, the presence of the wall at this moment configures a new source of light for the cruciform opening. The sunlight falls on the inner surface of the enveloping wall and gets reflected inside in order to illuminate the cross of light.

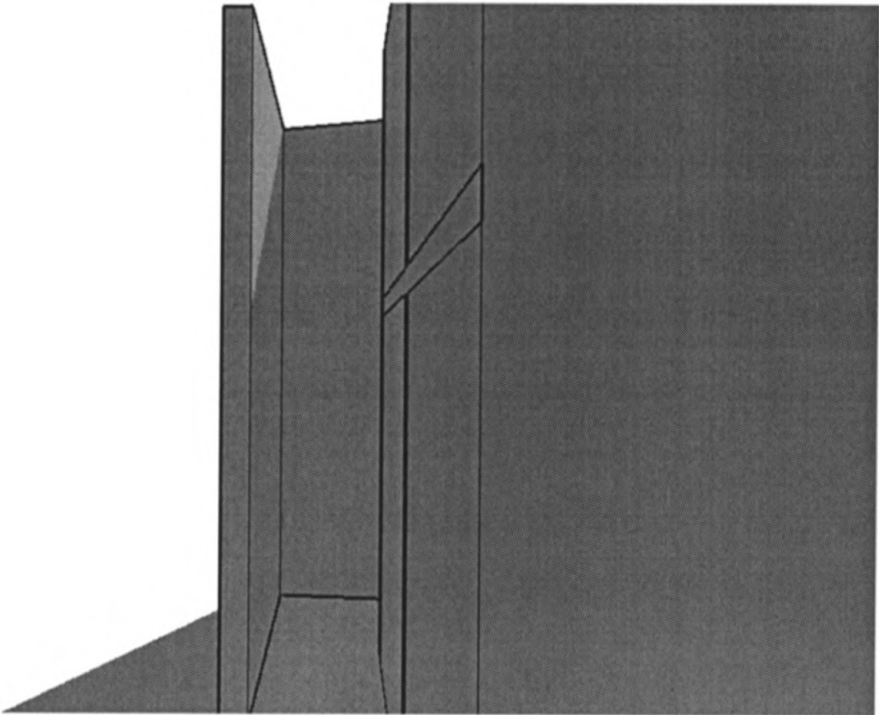
Light, which is reflected inside from the wall surface, undergoes a process of refinement. The gray concrete⁴³ absorbs the redness in the sunlight emitted by the evening sun. In addition, the sense of warmth suggested by the red tinge is eliminated before light can enter inside the Chapel through the cruciform opening. The idea of light, at this moment, integrates together the essence of nature and man's will to generate certain meanings, which are inevitable for man's recognition of his own being. The cross embodies the pure idea of light, which neither has color nor has any intensity left in it. It evokes an image of light in its stage of extinction. The cultural image of this stage can be identified with the idea of twilight, which is maintained in traditional Japanese spaces, such as *en* space and the interiors of the teahouse.

⁴³ We will discuss materials in detail in next section.

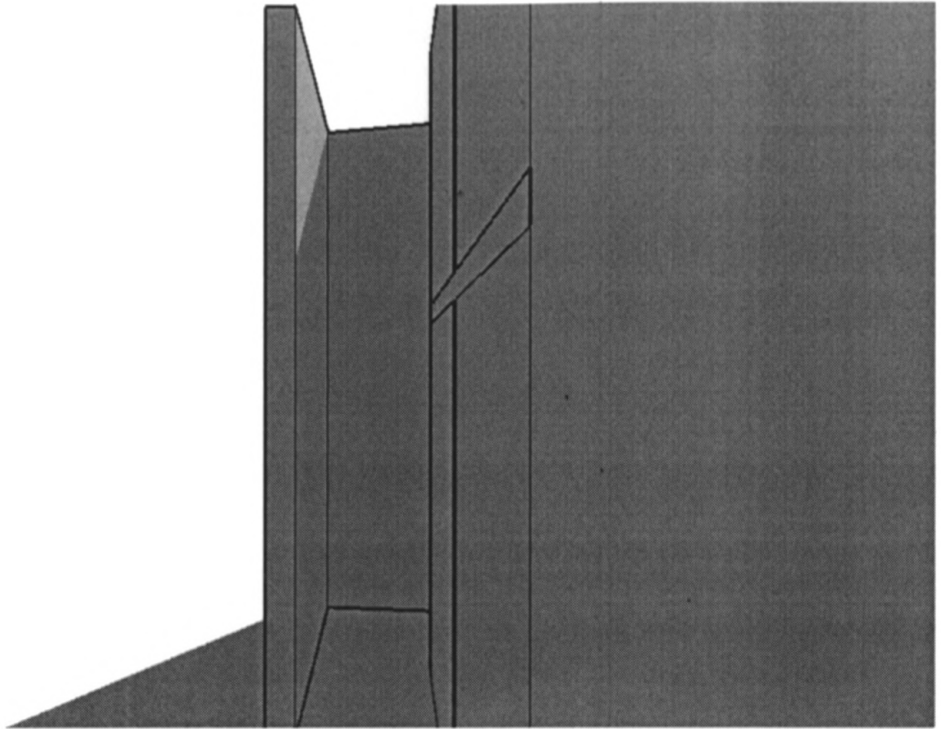
The following sequence of drawings depict the permeation of light through the cruciform opening, reflected by the wall in front, once the sun goes behind the plane of the opening during the summer solstice.



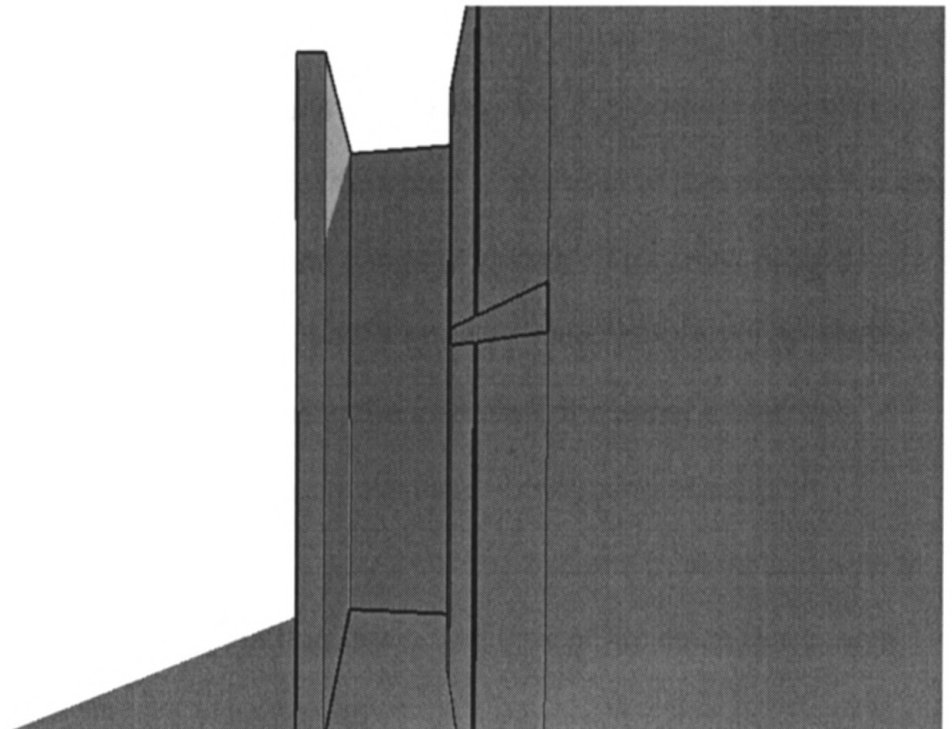
0400PM



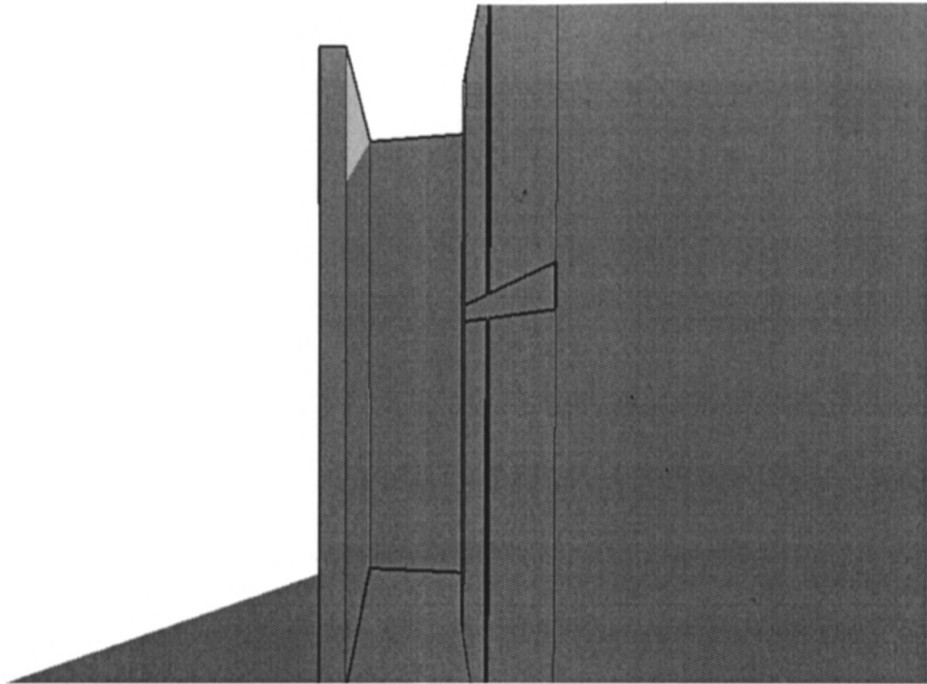
0400 PM – Light begins to fall on the inner surface of the wall



0430 PM



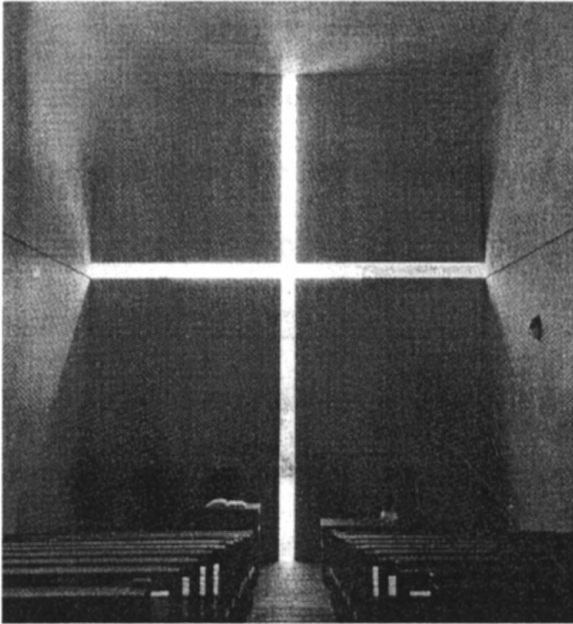
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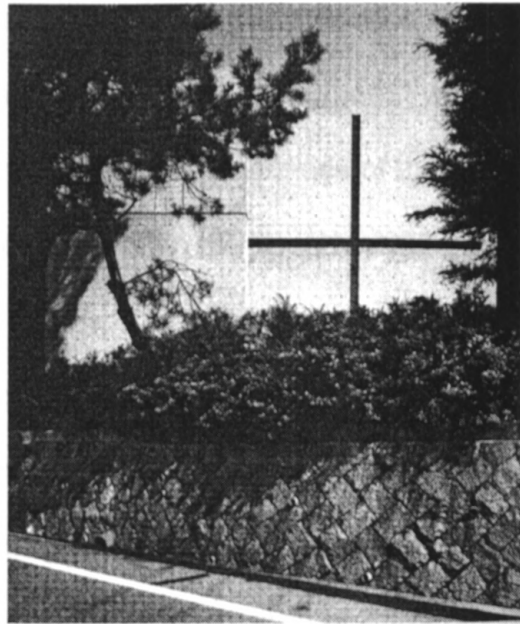
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With this analysis, the whole conception of the cruciform opening, geometry and orientation of the opening can be summarized as an idea of evoking the traditional essence of acknowledging space as phenomena. Although the cross is manifested as a symbolic representation of the principles of Christianity, the interaction of light and cross becomes suggestive of the idea of phenomena, which reaches a state of "sunyata" in the form of twilight and reveals the transience inherent in the absolute image of symbol. The cross of light reveals the idea of light as an event, which ends with the momentary revelation of "sunyata" (twilight), while anticipating the inception of another event, the darkness of night. With this ingenious devising of configuring orientation, geometry and building form in such a way that they become pure instruments to generate meaning in space, Ando transcends the idea of architecture as mere three-dimensional sculpture or spatial art.

REFERENCE to KAMI



Interior and exterior view of the cruciform opening
(Ando, 1995, P. 455)



(Ando, 1995, P.318)

The cruciform opening is the only mode of communication between the interior and exterior of the Church. It is the only medium, which conveys the sacred nature of the building to the outside observer.

From the exterior, the cross appears as deep dark incisions within the wall. The wall is constructed in concrete, which is translucent gray in color and highly smooth in texture⁴⁴. The cross and wall, together, compose a figure ground effect, in which the cross appears to be a void on a solid concrete surface. As indicated earlier, the darkness of the cross reverts back to the idea of darkness as a metaphor for depth. The darkness of the cross, which is

⁴⁴ The characteristics of construction material shall be discussed in the next section. At this moment, it is sufficient to know the basic characters of the wall surface.

enveloped and enclosed by concrete walls, indicates the idea of the presence of oku within the layers of space. It is similar to the idea of the presence of Okumiya indicated by the village shrine, which is located in alignment with the remote shrine. The depth of the cross and mysterious blankness of the walls become indicative of the presence of Oku deep within the space beyond the layers of walls.

However, within the Church interior, the cross appears as a brightly illuminated embodiment of the divine symbol. Except for the cruciform opening, rest all the other openings receive indirect light in the morning, resulting into a relatively dark ambience within the Church interior. This mode of illumination composes a dark background upon which the cross of light comes into existence. This image is the reversal of the image created on the exterior surface upon which the cross appears as a dark void. This reversal poses a question on the absoluteness of the cross as an eternal symbol of divinity, which contradicts the western notion of concrete and absolute manifestations of symbolic representations.

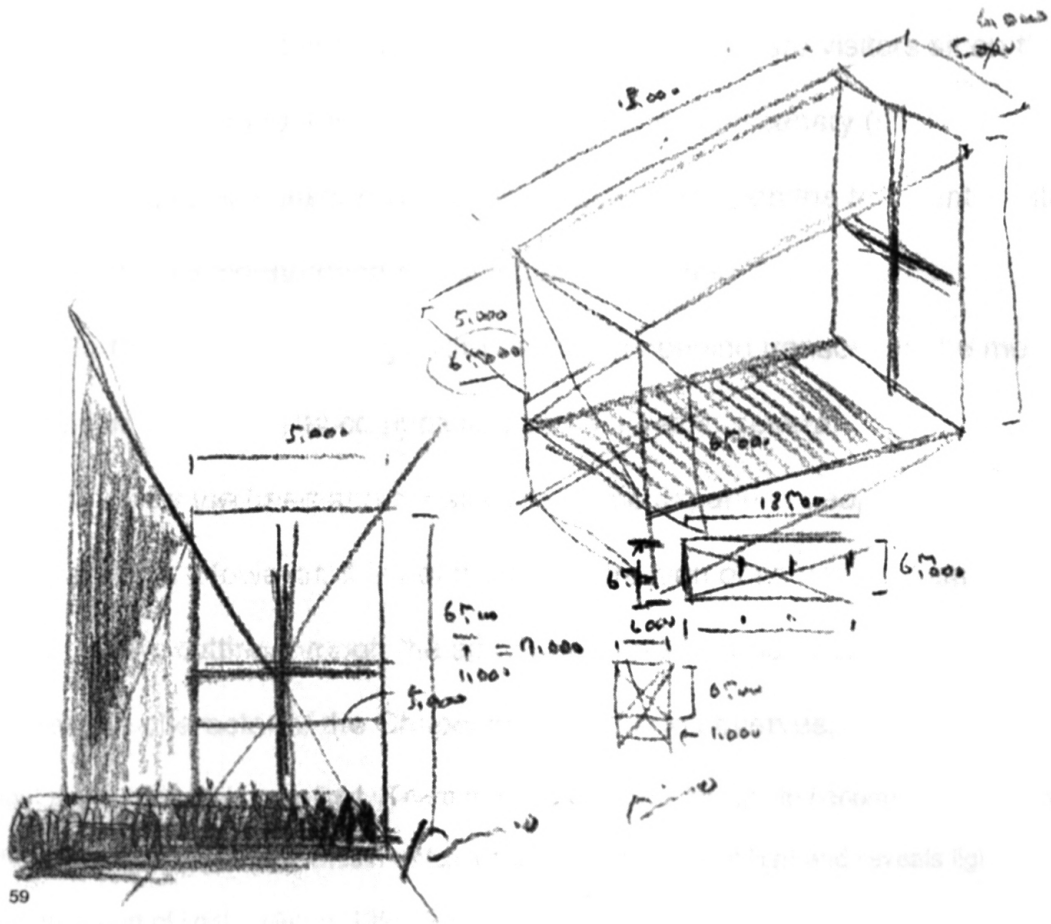
Nevertheless, this contradiction of images may be explained with an analogy of the incident with the perception and revelation of the Oku in Japanese traditions and myths.

Going back to the observer, who senses the presence of the Oku within the depths of the dark cross on the exterior wall surface, when enters inside the church, encounters the cross of light (appearing as a flash of light) within the darkness of the space. The appearance of the cross as a brightly illuminated

form in a dark space evokes the sensation of the emergence of kami out of darkness. This reference to the idea of the Shinto rites and notion of divine spirits appearing from darkness, which manifests as a metaphor for the idea of Oku, invokes historical and cultural elements of Japanese traditions integrated into an architecture which is intended to represent western beliefs and conceptions.

At this moment, it is significant to consider the composition of the cruciform opening in the Church interior with respect to perception of human eyes. The cruciform opening is placed at the south end of the Church. The floor of the church slopes down towards the altar, placing the observer along the same horizontal plane as the cross of light.

Within this spatial relationship between perception of the cross of light and the church interior, the suggestion of the presence of the Oku appears to lie beyond the cruciform opening, somewhere deep along the horizontal depth of the space. Along this line of design approach, the idea of subjective depth occurs in a horizontal dimension of perception in contrast with the idea of divinity symbolized through a spatial composition of the vertical reference of light and space in western spaces.



Idea of a horizontal plane suggested in preliminary sketches, Philips, 1996, P.18,

In the Chapel, the cross of light confronts the beholder along a horizontal plane. The outward expansion of space through the cruciform opening delineates a horizontal framework. The idea of inspiring awe through the heavenly presence of the divine in the form of light filtering down from above is replaced by an idea of confrontation with reality through direct experience. A phenomenal space⁴⁵ generated through the interaction of the cruciform opening and light is brought to the direct attention of the visitor through the spatial

⁴⁵ As discussed in previous sections

organization of geometry and orientation. The cultural and spiritual parallel to this spatial structure can be found in the teahouses, where visitors sit on the floor, which is open to the garden view or a borrowed scenery (shakkei). The idea behind this is to inspire visitors to contemplate upon the transient existence of being and the phenomena of the natural elements.

In the Church of the light, the cruciform opening transcends the mere symbolism inherent in its composition and aspires to generate meaning in space, which reaches the heart and sensitivities of the Japanese people in a more profound way. However, it is not mere construction of an embodiment of the cross of light, cutting through the space like a blade which determines and defines the character of the Chapel interior. Ando observes,

"Light alone, does not make light. There must be darkness for light to become light – resplendent with dignity and power. Darkness, which kindles the brilliance of light and reveals light's power, is innately a part of light." (Ando, 1995, P.471)

In line with this thought, Ando strives to generate an ambience of darkness within the church interior through which light reveals its brilliance. It is not the presence of cruciform opening within the Chapel, through which the entire process of manipulating light in a certain way has become possible. In addition to the cruciform opening, there are four other interferences into the space, which control the balance of light and dark inside the Chapel. Ando describes the construction of the Church of the Light,

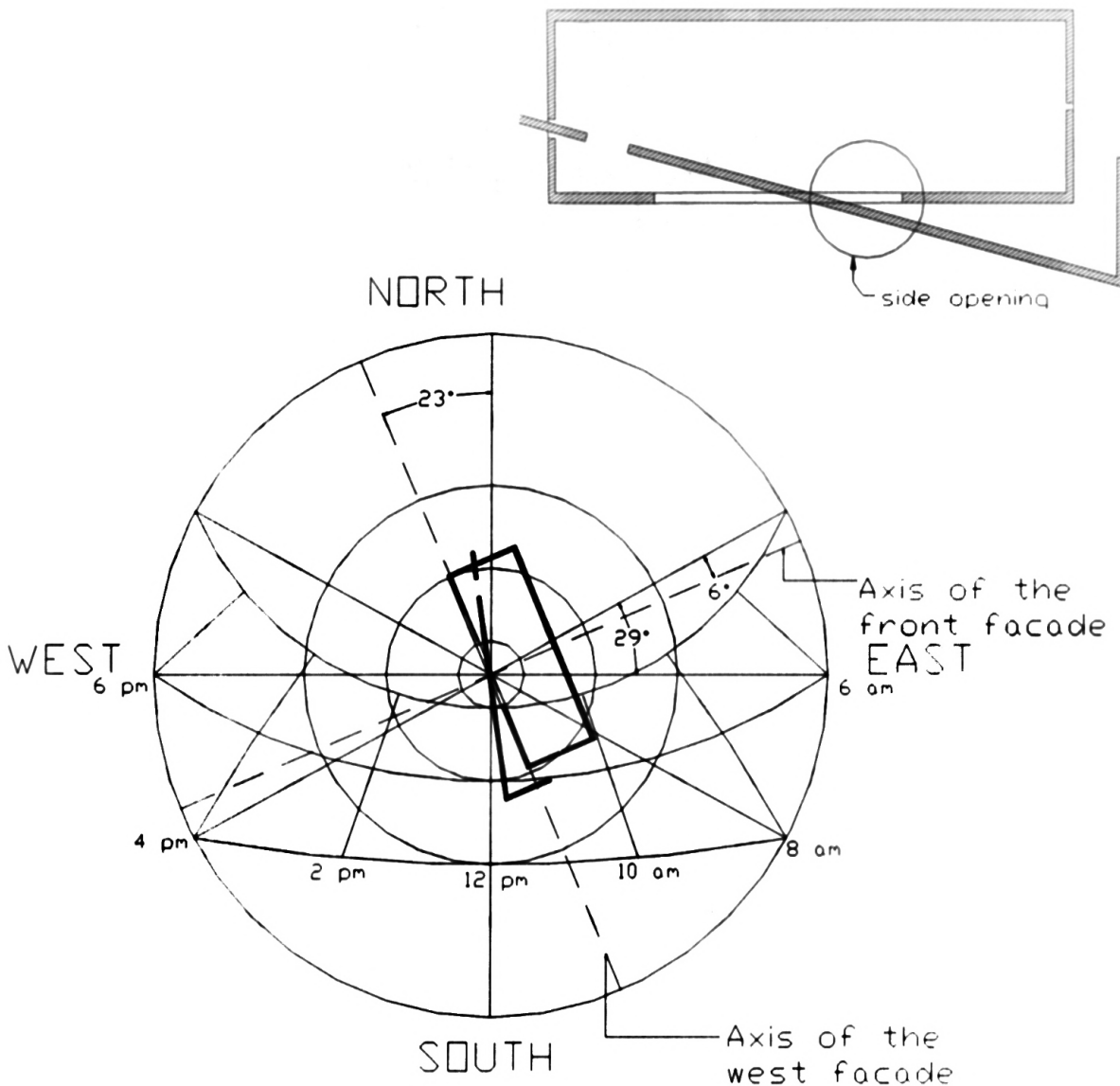
"As – 'a construction of darkness'... cut a slot in one wall, allowing the penetration of light – under conditions of severe constraint. At that moment, a shaft of light sharply fractures the darkness." (Ando, 1995, P. 471)

Within the Church interior, a limited number of openings determines the density and amount of light penetrating inside. A construction of darkness is achieved through rigorous monitoring of the penetration of light through a precise relationship between orientation and geometry of openings. Besides, the cruciform opening, four other openings can be identified within the Chapel. Interestingly, all of these openings are located on the west or the northwest wall of the Church. On the east portion, walls are devoid of any opening. Similarly, on the southeast wall, the cruciform opening is the only source of illumination.

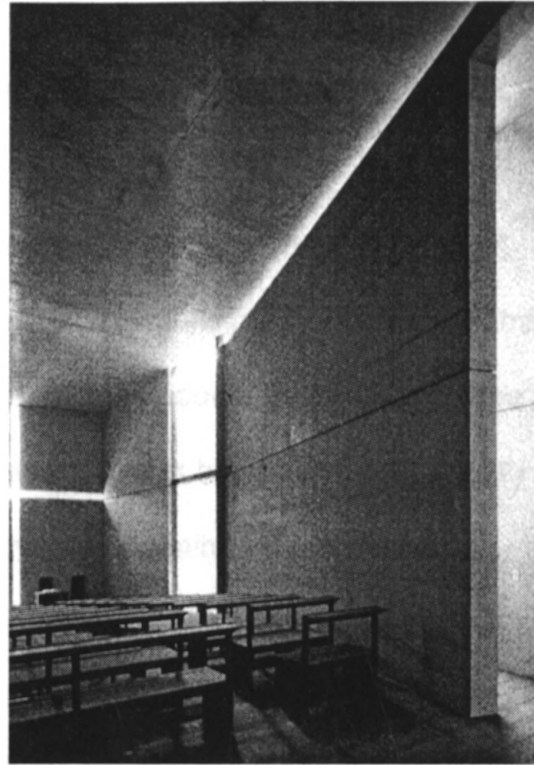
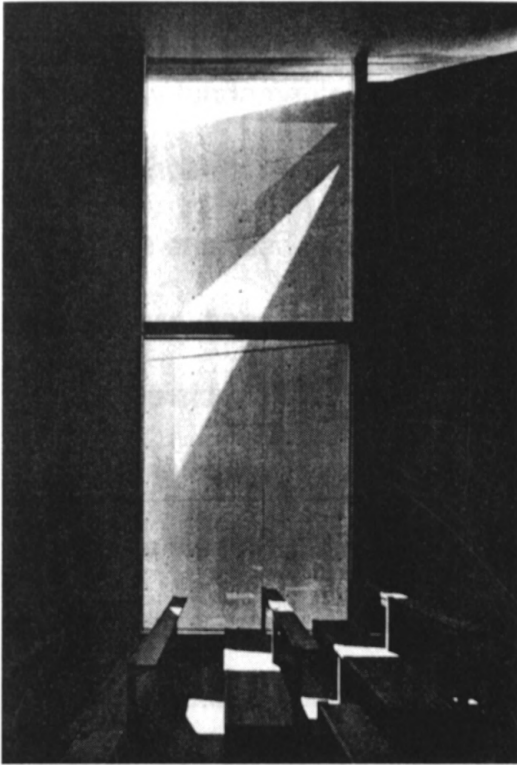
In order to understand the ambience and effect generated by all of these light sources, both in isolation and as a combined effect, it is inevitable to first identify their precise position in the building, their orientation with respect to the sun movement, and geometry and understand their relationship to each other and to the space as a whole. The next four sections discuss each of these openings in succession, beginning with the side opening, which is located on west wall adjacent to the cruciform opening.

Side opening

Located on the west wall of the rectangular cuboid, the side opening extends to the full height of the cuboid. It appears to have been ruptured by the wall, which penetrates through the cuboid, generating two openings on each side. The opening, which is created on the southwest corner, has been termed as the side opening for our convenience of reference.



Position of side opening with respect to sun path



Side Opening, Interior view, (Drew, 1996,p. 43-45)

The side opening lies on the west wall of the cuboid, which describes an angle of 67 degrees with the east-west axis. A small triangular area along the west wall of the cuboid is revealed through this opening. This triangular space is enclosed by the wall, which intersects the west facade at an angle of 15 degrees and at its other end extends to partially envelop the cruciform opening.

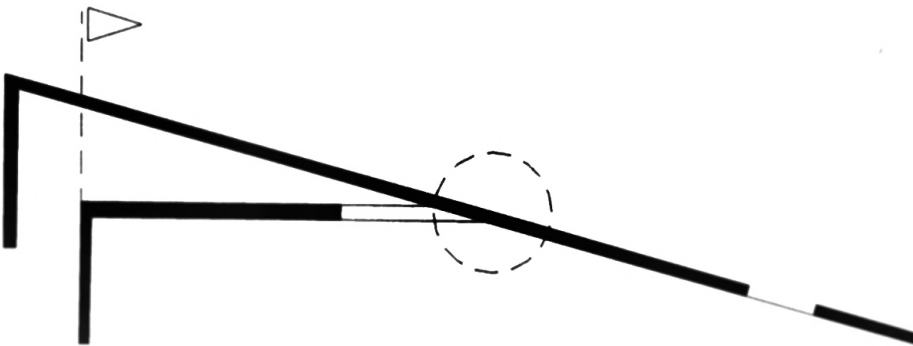
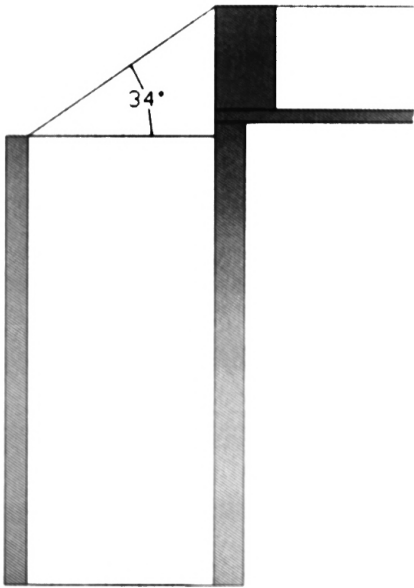
This triangular area may be observed as a redundant space, which has been a mere left over in the organization of spaces. Nevertheless, this triangular space, at the same time, may be compared to the *en* space⁴⁶ prevalent in

⁴⁶ Space generated by the enveloping wall is ambiguous in nature. It is simultaneously an exterior space and interior space or neither exterior, nor interior. The space is what, Kurokawa calls as, "synthesis of contradiction". It forms simultaneously an extension of Church and intrusion of nature into the interior.

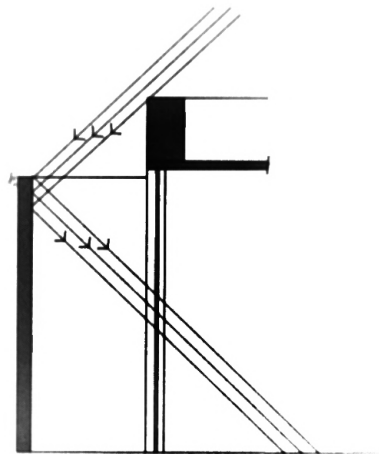
traditional Japanese architecture. This space manifests the ideals of emotionally fundamental space⁴⁷ described by Ando in his essay "A wedge in Circumstances".

The enclosed triangular space seems to have no obvious function; it nevertheless, becomes significant in terms of modulating light, which penetrates through the side opening. Within the space, orientation and geometry of the wall and opening maintain a syntax through which light is bent; carried and finally released in the Church interior through the side opening. Even though the opening faces a wall, it receives light from the east end of the gap between two walls and directs the light inside. The next section discusses the process of reception, refinement and redirection of light into the interior space.

⁴⁷ Ando describes Emotionally Fundamental Space as "Although I consider any emotionally fundamental space extraordinary, I feel that it must have meaning for everyday ordinary affairs. The meaning may be functional. It may be related to such technical matters as lighting and ventilation." (Ando, 1995, P.444)

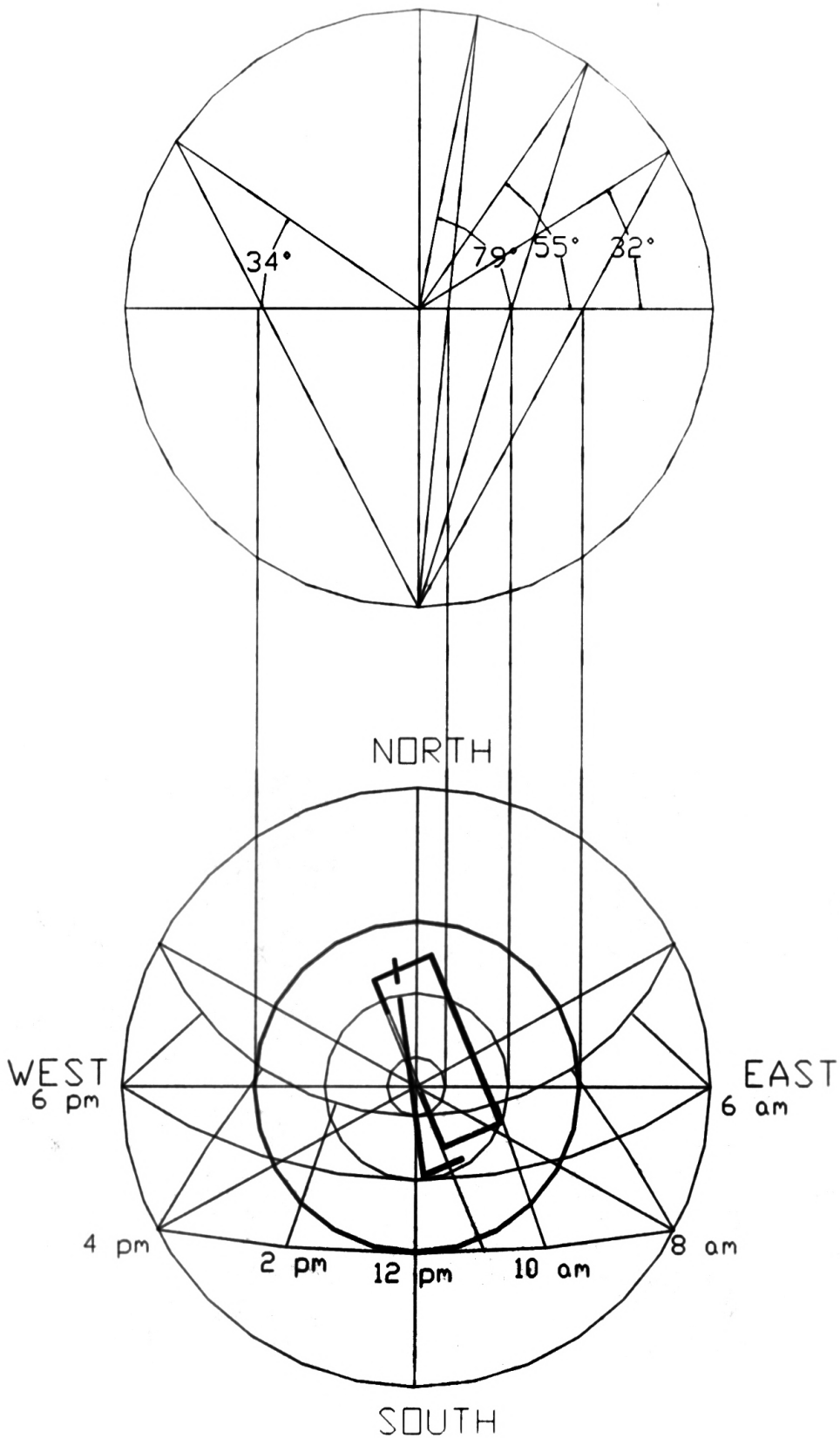


Section of the side opening and the triangular space. It shows the minimum altitude of the sun, which is required for penetration into the triangular space.

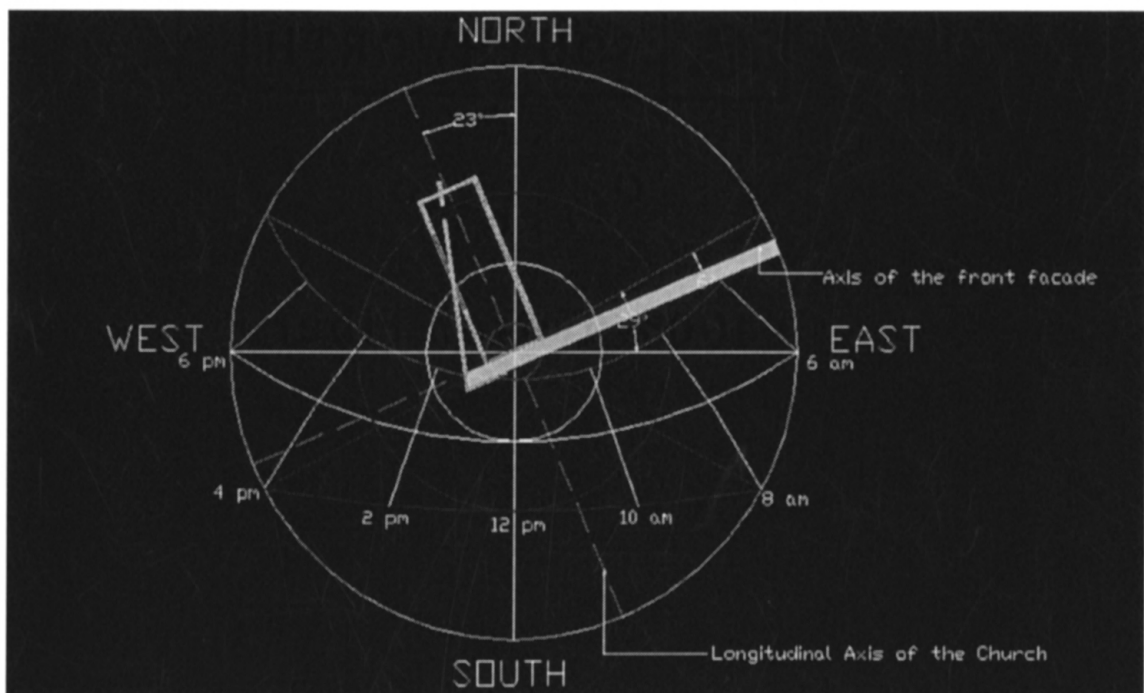


Section of the side opening, showing the penetration of reflected rays inside the church, once the sun reaches an altitude of 34 degrees

RELATIVE POSITION OF THE SIDE OPENING WITH RESPECT TO THE SUN
MOVEMENT



Since, the side opening is on the west side, logically the sunlight can enter through the opening only once the sun crosses the alignment of the west wall, which means sometime around noon. This condition to receive light is solved by the presence of the wall in front of the opening. When the sun is in the east and on the other side of the alignment of the west wall, the inner surface of the wall receives the sunlight. Then this wall redirects the light inside the Church through the side opening. However, as shown in the diagram, this process of receiving reflected light from the wall does not begin until the sun reaches an altitude of 34 degrees. Referring to the diagram, we can further conclude that the sun reaches the altitude of 34 degrees only around noon. However, the geometry and orientation of the wall and the opening are configured so that the side opening begins to receive the sunlight almost simultaneously with the cruciform opening, which faces east.



Behavior of space within walls as a medium to transport light within the church interior through side opening

The sun remains at a low angle during the early morning, making it difficult for a higher degree of illumination. Nevertheless, through a precise geometry and orientation of the wall and opening, light is received and molded to reach the church interior through the side opening. For this purpose, the gap left between the south façade (the wall with the cruciform opening) of the cuboid and the enveloping wall, which partially covers the cruciform opening function as transporting medium for light (refer to the diagram above). Metaphorically speaking, the gap acts as a pipeline, which carries light within to reach the innermost space.

The inner surface of the enclosing wall (which remains in direct angle with the sun due to the gap between the south wall of the cuboid and the wall, which envelops the cruciform opening) begins to receive light as soon as the sun rises in the east. This light is received by the wall and is redirected into the triangular space, which further reflects it into the Chapel through the side opening.

This precise methodology, which regulates the relationship of the orientation and geometry of the openings, transcends the characteristics of light and architecture, and transforms architecture as a theatrical stage where material and technical limitations are ingeniously manipulated to achieve the original intention of communicating meanings.

Light percolated from the side opening modulates the strained relationship between darkness within the Chapel and the bright glow of morning light illuminating the cruciform opening, which cuts through the darkness. If not

for the reflected light received from the side opening, the space would have resulted into an extreme contrast of light and dark.

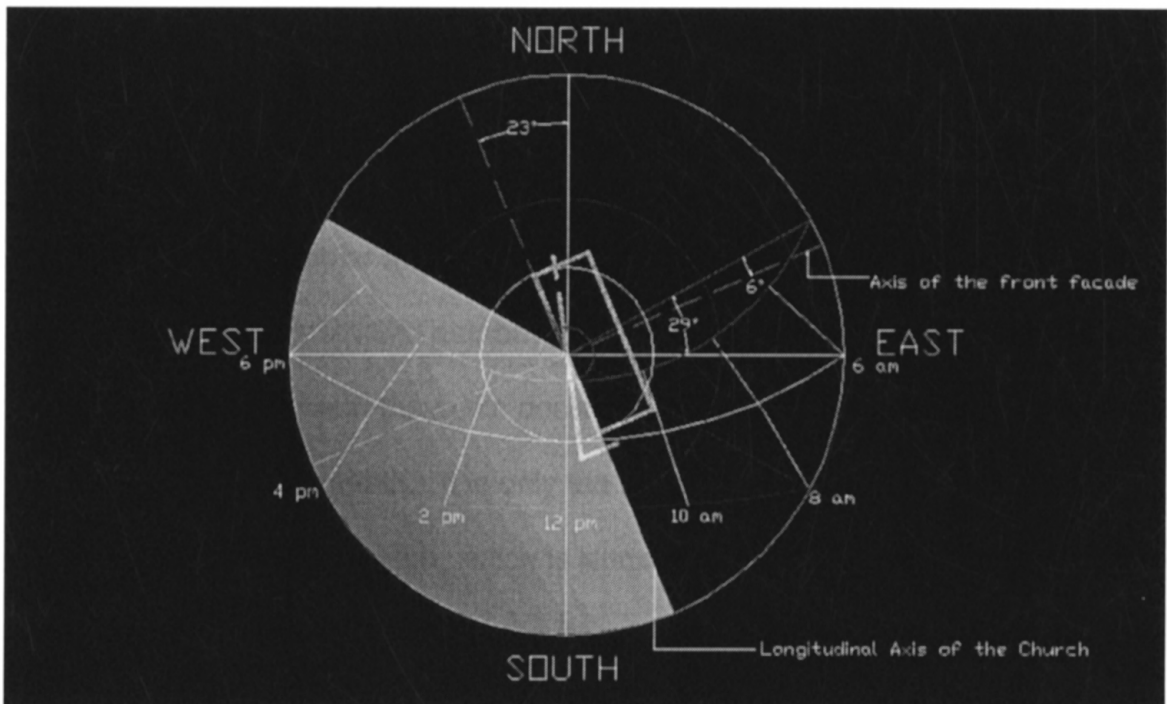
At this point, when the idea of exporting light has become clear, the whole process of reception, refinement and distribution of light can be structured into three conditions based on the positions of the sun throughout a day with relation to the placement and geometry of the opening.

The first situation is the period extending from the sunrise until the sun reaches an altitude of 34 degrees or conversely, it is the duration at which, light is transported through the vacant space between the walls, to the Church interior. During this period, the sunlight from the east falls along the gap between two walls. The walls and floor surfaces, transfer light further towards the side opening, which is located at right angles to the direction of the light. Morning light, which is though not intense, has a red tinge within. This light with a slight reddishness traverses within the volume delineated by gray concrete surfaces. During the process of transporting light to the inner sanctuary through the side opening, concrete surfaces absorb most of the color and warmth from the light. The morning light, which is not very intense, is further removed of any hint of impurities in the form of color or intensity. The light, which enters the Chapel, acquires a pure image of light. The space, which is illuminated in this light, mediates between the thick darkness of the Chapel and the direct light penetrating from the cruciform opening.

The second position of the sun, which has a considerable effect on the light conditions within the church interior, extends from the time the sun reaches

an altitude of 34 degrees until the sun has not crossed the plane of alignment of the west wall of the rectangular cuboid.

The sun reaches the altitude of 34 degrees around noon; time varying slightly according to the day of the year. Once the sun reaches an altitude of 34 degrees, the sunlight directly falls on the inner wall surface across the side opening. This light is then redirected to the side opening after being minimally refined by the concrete surface. The grayness of the concrete surface absorbs much of the intensity and color of the light and renders it with certain neutrality, which resembles the idea of the pure glow of twilight.



Position of the sun on the west, which allows the sun to be directly aligned with side opening

The third situation occurs when the sun aligns with the west wall of the rectangular cuboid and begins to drift along the southwest sky. The alignment of the sun and the wall along a single plane is a momentary phenomenon, which

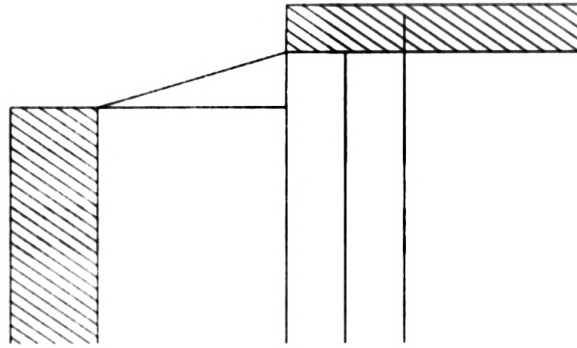
vanishes as soon as it occurs. However, at this brief moment, the sunlight brushes over the wall surfaces and falls directly on the triangular floor area enclosed by walls. For this single point in time, light is not reflecting from the wall surfaces but from the floor below, which redirects light to the Church interior through the side opening.

This moment onwards, the direction of the sunlight, the reflective surfaces, and consequently, the condition of the space change. Placed along the direct alignment with the solar angle, during this time, the side opening would have permeated direct the sunlight in absence of the wall, which obstructs most part of the light radiating from the southwest. However, the sun being at its segment of high altitude at this time, much light falls directly on the floor and on the west wall, which has the side opening; the wall in front of the opening is not blocking the alignment of the solar angle with respect to the side opening at this moment.

Due to the constricted gap between the side opening and the wall in front of the opening along with the sun's position at a high altitude, light does not penetrate inside horizontally. It is only the floor along the side opening both inside and outside the Church, which is illuminated by the sunlight during this period of high altitude. Light reflected from the floor during this time period finds its cultural parallel in the environment of Japanese houses, where due to the presence of low eaves and extended verandahs, light reflects from below and illuminates the surrounding space.

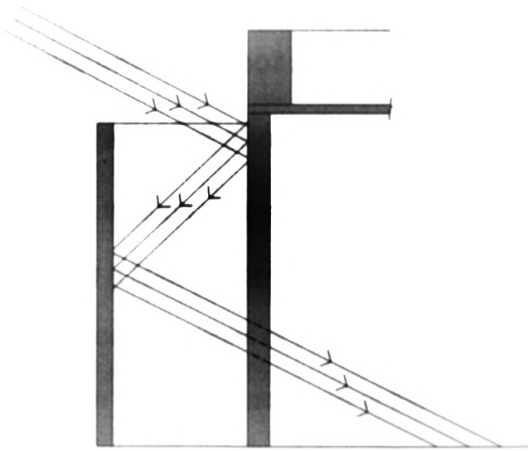
Going back to the point of direct penetration of the sunlight along the side

opening, which occurs once the sun crosses the planar alignment of the opening, through the gap formed by the juxtaposition of the side opening and the ceiling opening, a ray of light penetrates the space rendered in twilight.

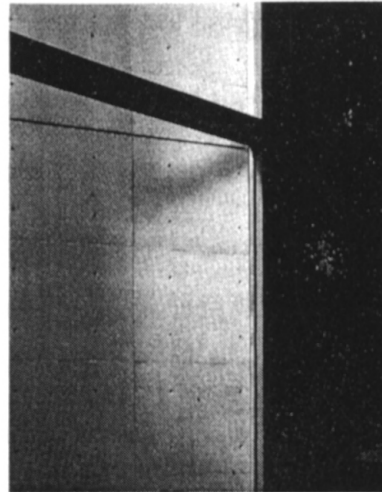


Triangular opening formed by side opening and the gap between the wall and the ceiling.

The spot of light acquires a triangular image, mirroring the opening generated by a combination of the ceiling gap of 18 cm and the side opening. With the drifting of the sun horizontally towards the west and losing in altitude, the triangular spot of light follows the trajectory of the sun, which is ephemerally recorded on the floor and the wall, within the Church interior. Until the sun sets in the west, the triangular spot of light continues to trace the sun path, which as if to end the event dramatically, transforms into a fantastic flash of light—at the moment when the sun touches the horizon. This appears for a brief moment and vanishes as soon as the sun sets down in the west.



Reflection and re-reflection of the sunlight before permeating through side opening



Side Opening, dimly lit by reflected light (Drew. 1996. P.47)

Simultaneously, effect of light is changing on the exterior as well with the movement of the sun towards west and with gradual reduction in the altitude of the sun. Light rises up from the floor to the wall (on which the side opening is located). With this change in the direction of light, another phenomenon occurs—light, which now falls on the outer surface of the west wall of the cuboid and is reflected towards the inner surface of the wall across the opening. This reflected light is further transmitted to the church interior after being successively directed from one concrete surface to another (Fig. above). Light, which penetrates the volume delineated by these walls, appears to be trapped within the geometry of the walls. With each collision of light and concrete surface, both the surface and light, change in appearance and the effect they create. When light falls on the concrete surface, the grayness of concrete bleaches any tinge of color latent in light. In addition, the idea of coldness reflected in concrete reduces any warmth or intensity of light. Consequently, the resultant space is

delineated in renderings of monochromic gradations of light, which neither posses any color nor any warmth. This characteristic of the concrete surface aligns it with the shoji screens in Japanese architecture, which Ando describes, " Passing through such a partition, light quietly diffuses into the interior, to mingle with darkness, producing a space informed by monochromatic gradation. Japanese architecture has traditionally endeavored, by means of its sensitive technology, to break light down to its individual particles. The subtle changes it achieves at the level of tremulous energy bring space almost imperceptibly into being." (Ando, 1995, P. 470)

In line with this observation, within the volume described by the walls around the side opening, the process of reflection and re-reflection renders the sunlight devoid of any notion of color or intensity. The light, which eventually reaches the interior space through the side opening, is exhausted to an extent, where it contradicts the very idea of light.

Following the essence of the discussion, it can be concluded that the light, which percolates through the side opening is not introduced to the space in its raw state of existence. The syntax of the geometry of the walls and opening and continuously altering the solar angle have been integrated and structured such that light, which enters the space, undergoes a rigorous process of refinement and distillation. The process of absorption, reflection and re-reflection to which the light is subjected undermines any presence of color and warmth, rendering the idea of light abstract. This extremely diluted light manifests as a mere tonal reference to the idea of illumination. The manifestation of an abstract presence of light in space creates the notion of *en* space. This space, which mediates between the thick, all-consuming darkness of the Church and the blade of light

penetrating through the cruciform opening, manifests the idea of twilight, which is indicated by neither the presence of light, nor darkness.

It invokes the existence (or to say, non-existence) of the idea of “sunyata” by eliminating any referential meaning of the space in terms of light or dark. This state of existence relieves space of any attributes or meanings, which is designated by events. This idea of twilight delineates a moment in space, exempt of any meaning, which signifies the very embodiment of Zen, observed by Roland Barthes in his essay, “Empire of Signs”, “The whole of Zen wages a war against the prevarication of meaning”. (Barthes, 1983, P. 73)

The notion of twilight in space that Ando achieves through the geometry of the side opening (with relation to the orientation) indicates the highest ideal of Japanese culture—the notion of “Sunyata”. However, this notion of “sunyata” becomes elusive, when the triangular ray of light, which is discussed in the previous section, disturbs the serenity of the twilight. This phenomenon can be explained in light of Buddhist philosophy, which states “sunyata” is “tathata” and “tathata” is “sunyata”. The implication of this ideology follows that it is the emergence of events, such as light, shadow, and darkness, which reveal the existence of emptiness. Absolute emptiness is the source from which events arise and ultimately dissolve into it. Space is manifested as emptiness, which becomes further observable by the flickering existence of events in time and in space. Twilight informs of a connecting link or an idea of emptiness existing between two successive events.

Idea of “sunyata”, which is manifested as twilight in space, is revealed, when a ray of light emerges out of it and ultimately dissolves into its own source

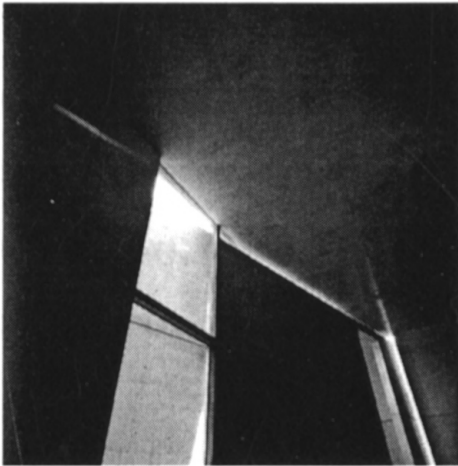
of existence. Within this context, the ray of light does not manifest itself as an extension of the sun; rather it emerges as a fragment of light in space informed by twilight. The idea of the sun as a source becomes evasive, since, the geometry of the opening does not reveal the source to the observer. This phenomenon reveals the idea of “sunyata” with respect to time, since the event occurs relative to time.

This idea of “sunyata” is also revealed in space, when the events of dark and light occur with respect to the movement of Shintai. In the Church interior, the space informed by twilight along the side opening, offers a link between bright and intense light, which embodies the cruciform opening and the rest of the Church interior, which is immersed in darkness.

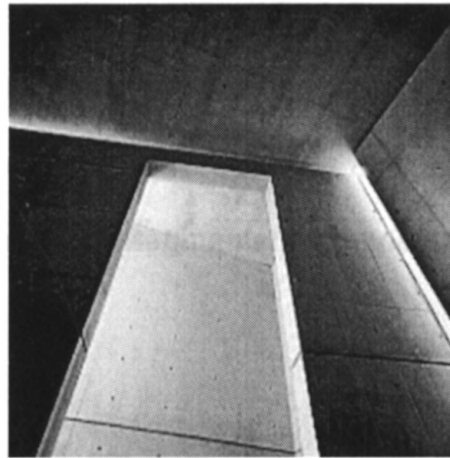
This subject of observing “sunyata” as twilight with respect to space and time, will be further discussed in detail in the last two categories of our analysis of “The Church of the Light”.

Ceiling Opening

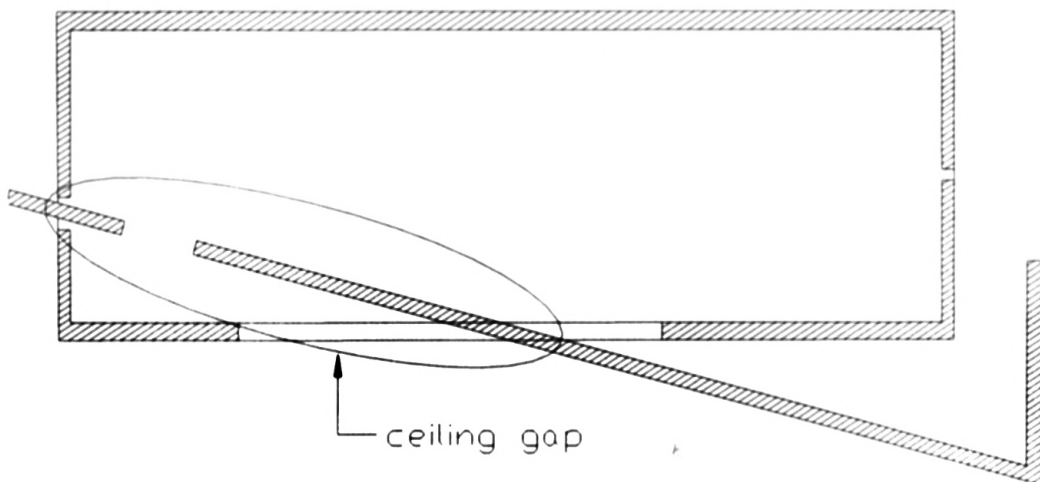
The ceiling opening is created out of a pure geometrical operation, which juxtaposes two units in space—a cuboid and an L-shaped wall. The opening results, when the L-shaped wall angles and penetrates inside the cuboid along its west wall.



Ceiling Opening, Interior View,
(Plummer, 1995, P.125)



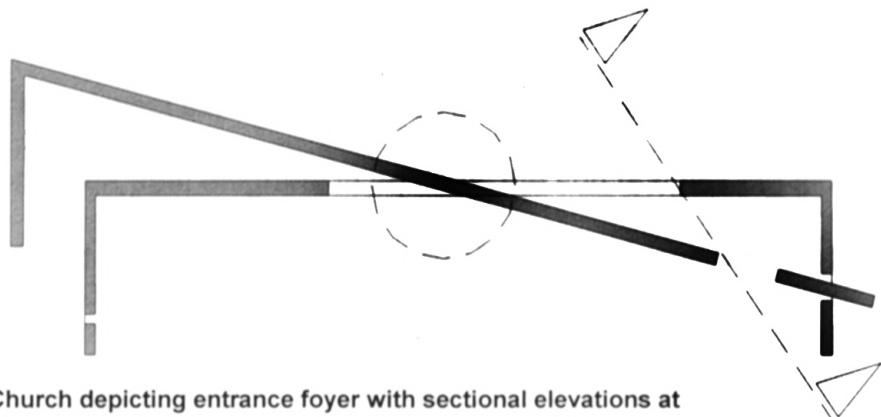
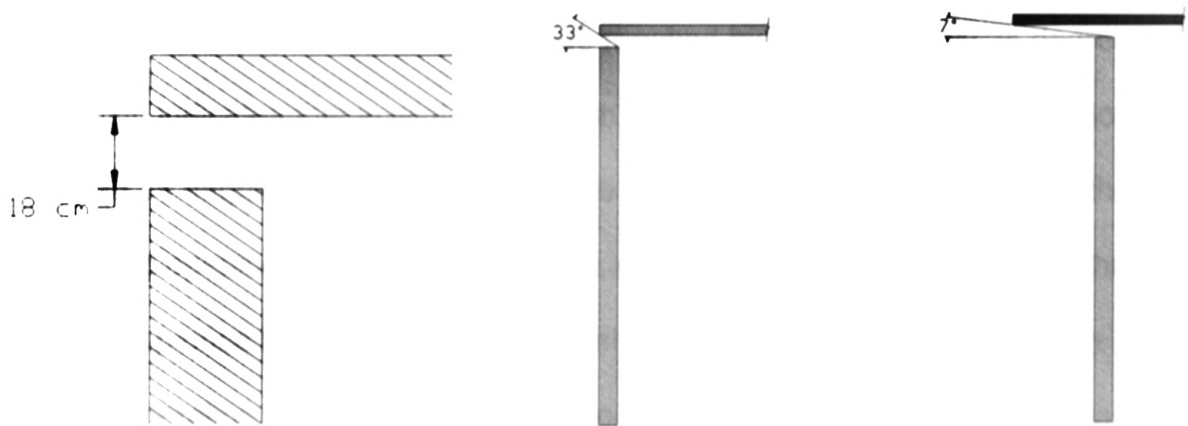
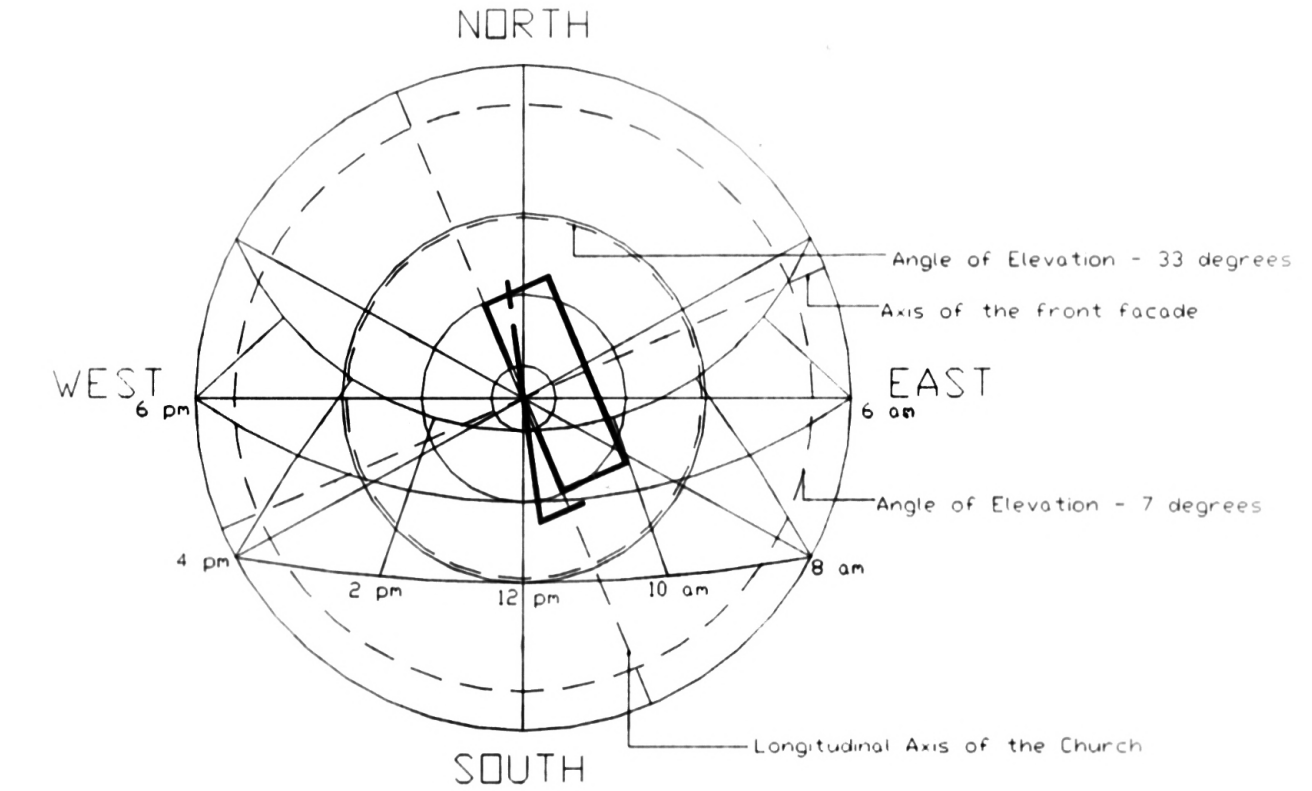
Ceiling Opening, Interior View,
(Plummer, 1995, P123c)



The L-shaped wall being 18 cm short of the ceiling height of the cuboid, results into the separation of the top surface of the wall, from the ceiling surface

of the cuboid, which creates an opening throughout the cuboid. For our reference, this gap of 18cm throughout the cuboid is termed as the ceiling opening. This gap does not function as a mere geometric element to establish the individual planar surfaces in the composition; rather it fragments the notion of a cuboid and suspends the whole composition between a state of form and non-form. Within this context, the gap manifests itself as an idea of "MA", which articulates the opposite notions of solid/void, form/non-form. In addition, the geometry and orientation of the gap introduces intangible elements of light and create shadows, which further informs the space of fragmentation rendered through the phenomena of light.

Diagram showing relative position of the ceiling opening with respect to the sun path



Part Plan of the Church depicting entrance foyer with sectional elevations at two points

The ceiling opening is located along the west façade of the Church. Nevertheless, due to the angled position of the cuboid along cardinal axes, the opening is slightly inclined towards southwest. Along this position, the opening permeates light from the southwest sky into the space. Referring to the geometry of the opening in the diagram, it is observed that the angle of the penetration of light alters corresponding to the position of the wall inside the cuboid. At the point of intersection, the altitude of the sun; needed in order to penetrate through the opening, is 33 degrees, which reduces to an angle of 7 degrees along the entrance. These measured angles are the maximum angle required at given points of the wall.

Such low angles required for direct penetration through the ceiling opening are reached only when the sun is in the west sky, with one exception. During winter solstice, the maximum altitude reached by the sun is only 34 degrees, which indicates that in winters, the sun remains at an altitude around or lower than 34 degrees. This condition of the solar angle and the geometry of the ceiling opening implies that in winters, direct the sunlight can penetrate through the gap once the sun is in the segment of alignment with the opening. In consideration with the sun path on two other significant moments in a year, which are the summer solstice and the equinox, such low altitudes are reached only when the sun is in the west sky and few hours away from setting down. In agreement with the sun path diagram, in equinox, the sun reaches the altitude of 33 degrees at around 3 pm in the afternoon and touches horizon 3 hours later.

During the summer solstice, the sun reaches 33 degrees approximately at 4 pm in the afternoon and sets in the west at around 8 pm in the evening.

In agreement with this analysis, it is observed that it is only in the afternoon that light penetrates directly into the interior of the Church space. At this point, I would like to recall the triangular ray of light, which enters the space, mirroring the opening, which has resulted as a juxtaposition of the side opening and ceiling opening. This phenomenon of light has been discussed in the previous section during the analysis of the side opening. Since, the ceiling opening and the side opening are configured in continuation without any division of any kind, they constitute a triangular opening in alignment with the solar angle. It is this triangular spot of light, which begins to traverse across the Church interior, as soon as the sun reaches an altitude below 33 degrees in the southwest sky.

In line with the idea of mirroring the image of the opening on the wall surface of the church interior, it follows that when the sun reaches zero degree of altitude, which means that when the sun touches the horizon, it aligns with the ceiling opening in parallel. This is a significant moment, when the sunlight, like a flash, changes into an elongated image on the wall, tracing the full length of the ceiling opening. Within a few moments, the sun sets down and the event disappears into darkness. This becomes a phenomenal event, captured and projected on the wall like screen, which evokes the essence of Basho's following haiku,

How admirable he is

Who does not think, "Life is ephemeral"

When he sees a flash of lightning!⁴⁸

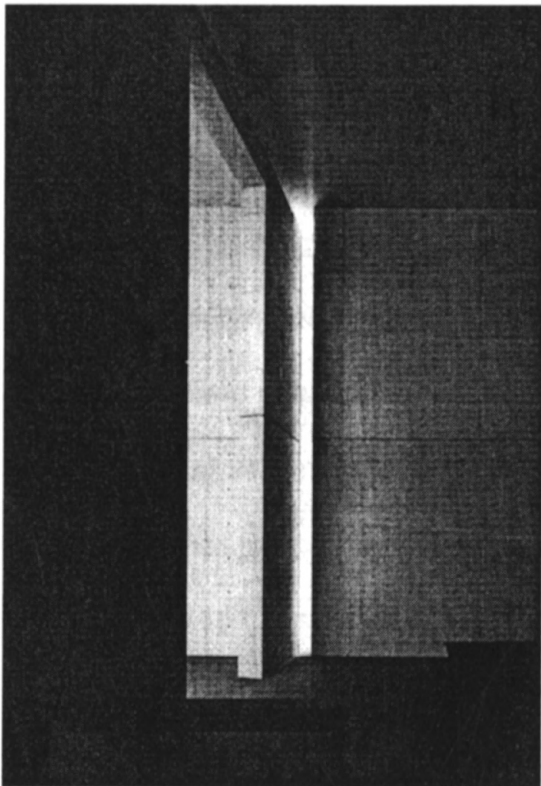
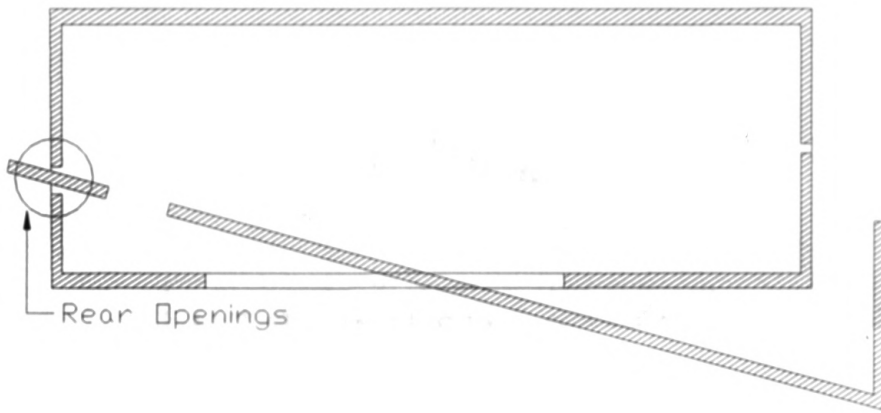
Having discussed the syntax of the geometry and placement of the ceiling opening with respect to the solar angle at different times in a day and at significant days in a year, it is generally observed that the ceiling opening does not permeate direct light into the space until late in the afternoon. In effect, during the daytime, only indirect light from the southwest sky percolates through the opening, which brushes along the ceiling surface. Being indirect, the light is not as intense and reduces further in intensity, when it lingers along the ceiling surface, which is constructed in gray concrete. The grayness of the concrete absorbs color and warmth from the light and consequently, as we discovered in the previous section, the space glows with the pure image of light, which invokes the presence of twilight, imagined as a notion of "sunyata" in Japanese spatial sensitivity.

In complete observance of the manipulation of light with respect to the placement of the ceiling opening in the Chapel, it can be construed that the presence of the ceiling opening restores the notion of MA, which not only articulates solid/void, form/non-form, but also, the intangible elements such as light/dark. It manifests the space permeated by twilight, occasionally interrupted by events, which occur for a brief period and eventually disappear. Ceiling gap fragments the presence of space through successive appearance and

⁴⁸ Barthes, 1983

disappearance of events from emptiness, "sunyata", signified by the presence of twilight in space.

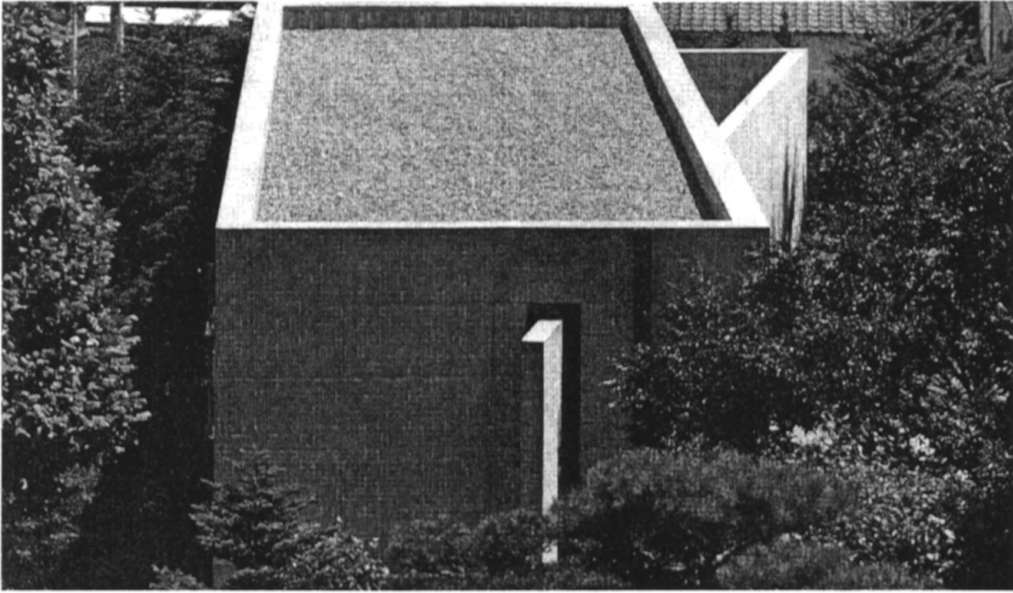
Rear Opening



Interior View of the Rear Opening
Drew, 1996, P.44



Exterior View of the Rear Opening
Drew, 1996, P 24

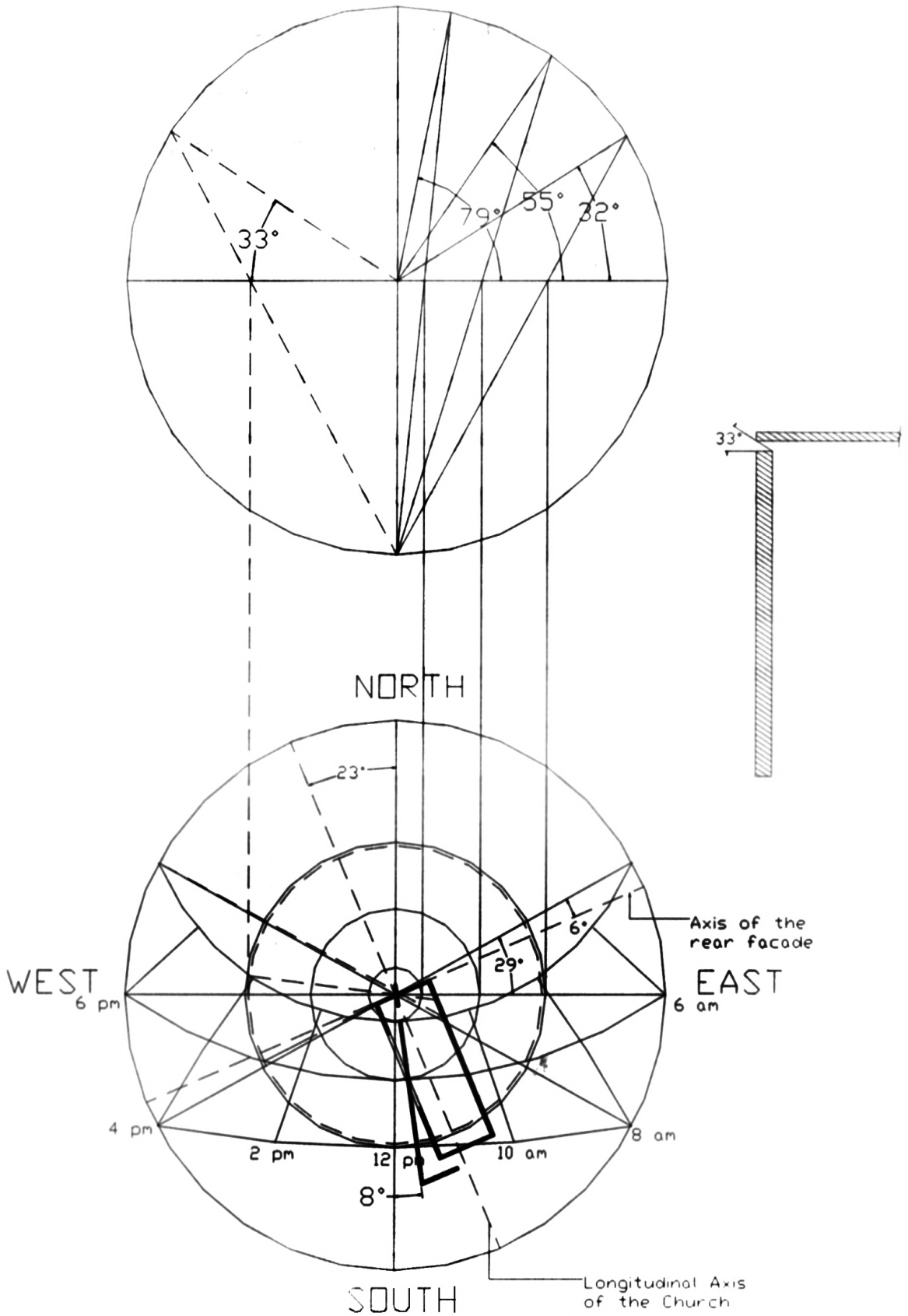


Rear Opening, (Drew, 1996, P.40)

The slit like openings created on the wall, which faces the cruciform opening, are termed as rear openings for our reference. The openings have resulted out of a geometric operation in which the L-shaped wall penetrates the rear wall (which is the north wall), at 75 degrees. Two slit like openings, which extend to the full height of the cuboid are created on both the sides of the wall, which projects beyond the territorial boundary of the cuboid, suggesting the built-in dynamism and power in the wall.

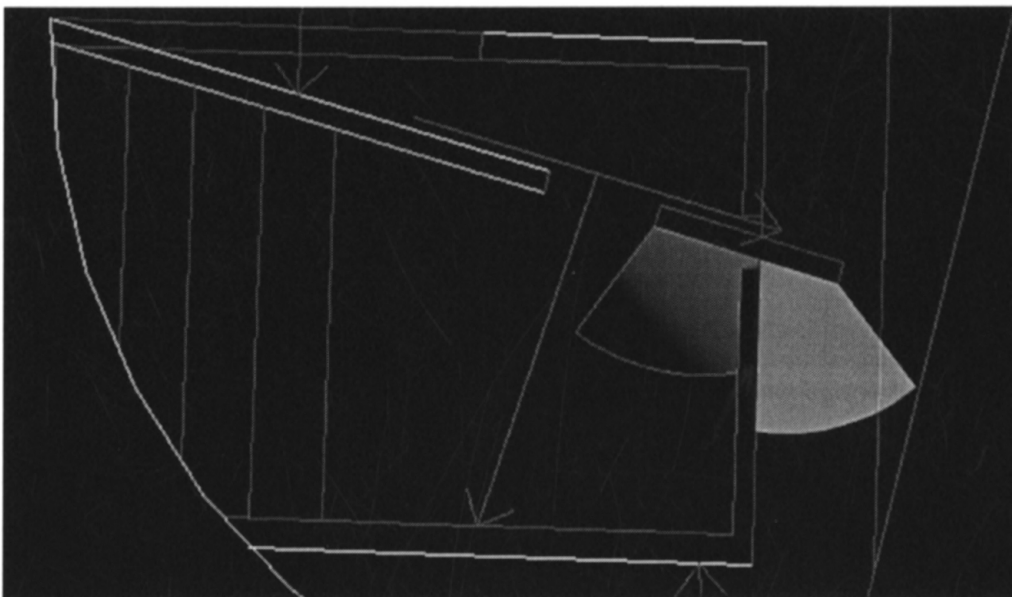
The planar identity of both the walls—the one which pierces and the other which has been pierced—remains intact due to the fact that the wall, which penetrates is 18 cm shorter in height than the ceiling height of the cuboid. This geometric operation, in fact, engenders an inverse U-shaped opening, which surrounds the penetrating wall, with one arm opening into the Church interior and the other arm opening into the entrance foyer, while a ceiling gap of 18 cm remains on the top, along the ceiling surface.

Diagram showing relative position of rear opening and the sun path



Openings on both sides of the wall exist on a single plane; however, the geometry of the openings attributes each opening with distinct characteristics. The wall, which segregates the two openings, maintains an angle of 8 degrees with the north-south axis. This orientation generates two distinct alignments along which the openings can receive light. For our reference, the opening towards northwest is called the northwest opening and opening towards the northeast is called northeast opening.

Referring to the sun path with respect to the rear openings, it is observed that the plane of the openings is almost aligned with the solar angle of the sunrise during the summer solstice. During the equinox and winter solstice, the sun rises due east and due south, respectively, which indicates that during this period rear wall is never directly aligned with solar angle. This observation points out that for our analysis, direct light permeating from the northeast opening is not significant, since the opening is never in direct alignment with the sun.



Representative diagram showing illumination through rear opening

However, at the same time, the significance of the wall, which is projecting out in front of the opening is considerable, since it is the wall surface, which manifests as the light source for the rear end of the Church. Until the sun crosses the alignment of the wall, rear space of the chapel continues to receive reflected light from the wall. The idea behind introducing not direct light but reflected light (which is first received by the concrete surface of the wall) is to engender a space permeated by the idea of twilight, an idea of illumination in which light, which enters the space, has lost its vigor and intensity, is rendered gray and cold and which, illuminates the space with the pure idea of light.

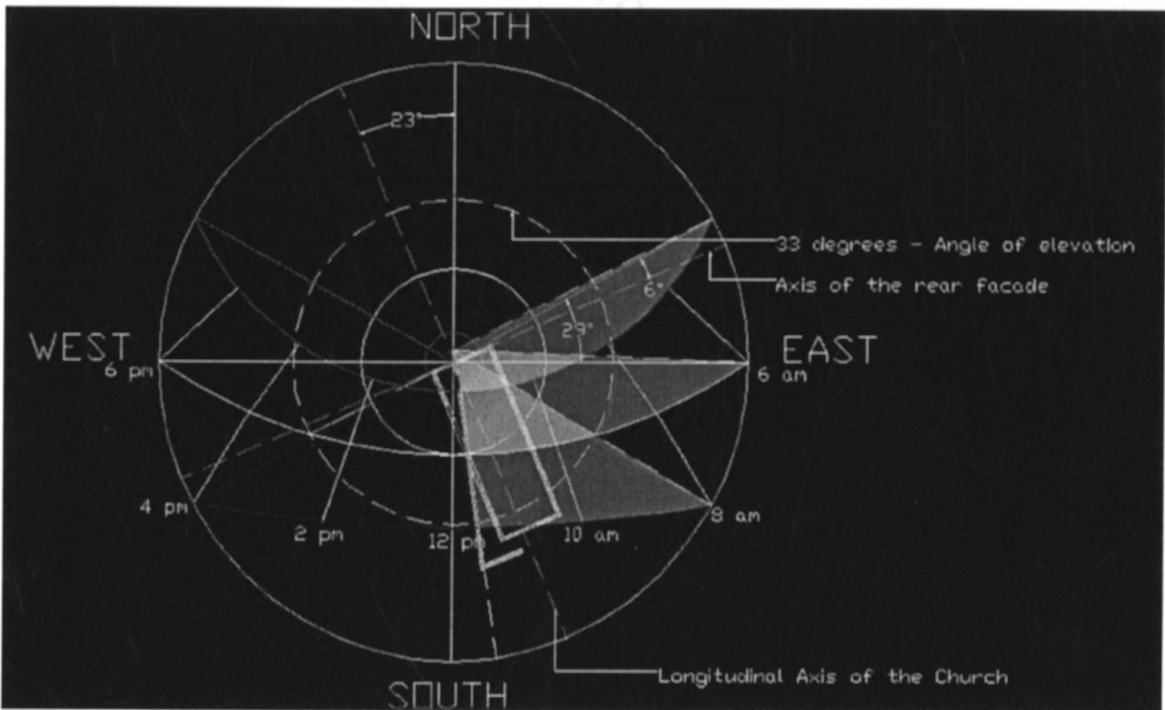


Diagram showing the sun positions at different times, when the sunlight is reflected through northeast rear opening

The process of the illumination of the rear end of the Chapel implies a structure of precise geometry and orientation, which introduces light with a

certain intention and which does not deviate from the original idea of Japanese spaces.

Having discussed the geometry and orientation of the northeast segment of the rear opening with respect to the sun's position, the next point to analyze is the northwest segment of the opening. It is deduced, referring to the sun path diagram, that this part of the rear opening faces the west sky. This observation indicates that the reflected light from the segment of the west sky remains the only source of illumination for the opening throughout the first half of the day.

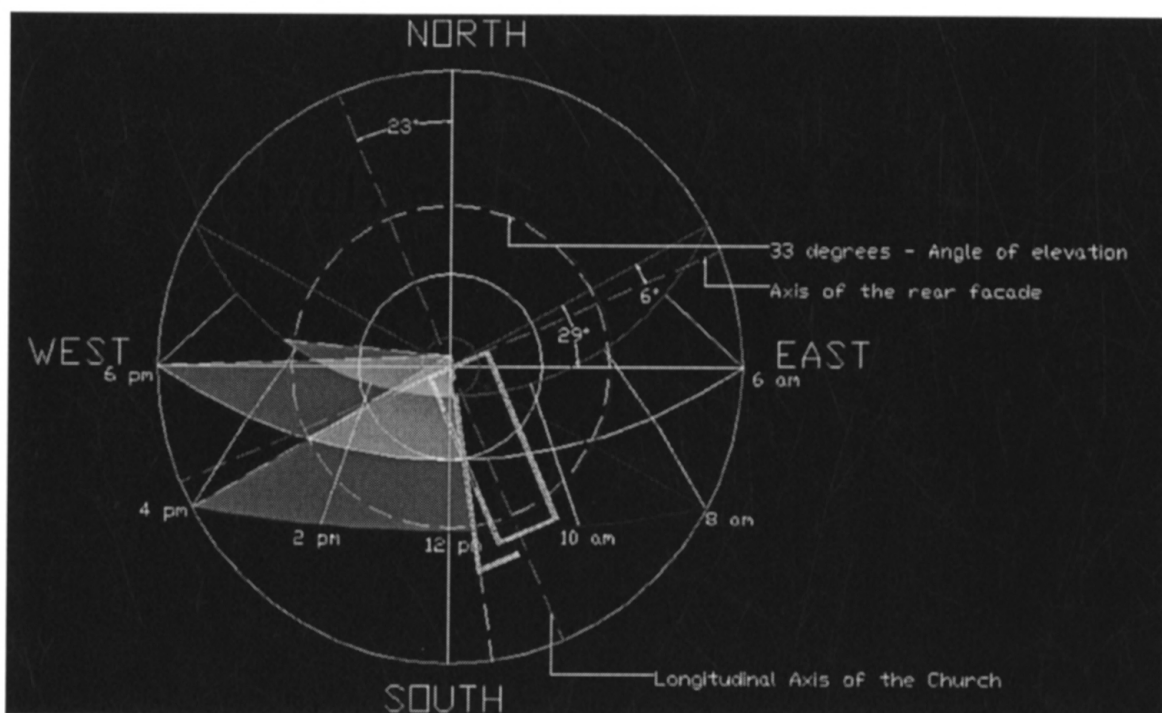


Diagram showing the sun positions at different times, when the sunlight is reflected through northwest rear opening

Once, the sun crosses the alignment of the wall (which segregates the rear opening), the northwest surface of the wall begins to receive the sunlight, which is subsequently reflected through the rear opening to the entrance foyer.

The opening, never being in direct alignment with the solar angle, does not receive any direct light from the sun. Nevertheless, the northwest surface of the projecting wall receives light from the west sky and redirects it into the entrance foyer. This process instigates the similar phenomena of filtration of light through a process of absorption and reflection.

Reflecting on the whole *modus operandi* of the rear opening, it is construed that along the two divisions of the rear openings, space remains continually impregnated with the idea of “*sunyata*” in the form of twilight. Nevertheless, both the spaces—entrance foyer and Chapel interior—along the rear opening fluctuate with respect to the intensity of the illumination, which corresponds to the current positions of the sun throughout the day.

In consideration with the perpetual presence of twilight in the space, it is significant to acknowledge the direct penetration of the sunlight for a brief moment in the evening. With reference to the sun path diagram, a segment in the sun’s trajectory is indicated to be in direct alignment with the rear opening, which makes its way through the top segment of the U-shaped rear opening. Nevertheless, this event occurs only during the summer solstice, when the sun sets due north. Just before touching the horizon, the sun remains at extremely low angles (>33 degrees as shown in fig.), which facilitates the deep penetration of a red beam of the sunlight into the space permeated by perpetual twilight. However, within moments, the sun sets down and shaft of light is immediately replaced by darkness. Screening of this phenomenon within the church interior signifies the idea of twilight as a void moment, which informs of a link between

the sudden appearance of a red beam of light and the successive emergence of the darkness from within the same source of emptiness. Within this context, architecture manifests itself as phenomena, which is impregnated by the flickering moments of appearance and disappearance of events in space and time, and simultaneously, the moment of “sunyata” reveals itself in the form of twilight in between two successive events.

Throughout the process of engendering space, which evolves through a certain methodology involved behind the manipulation of light, the presence of the wall projecting out of the opening plays a significant role. The geometry of the wall involving a particular orientation and a specific length maneuvers approaching the sunlight in two distinct ways. Behaving as a shield, the wall renders any direct penetration of the sunlight through the openings extremely

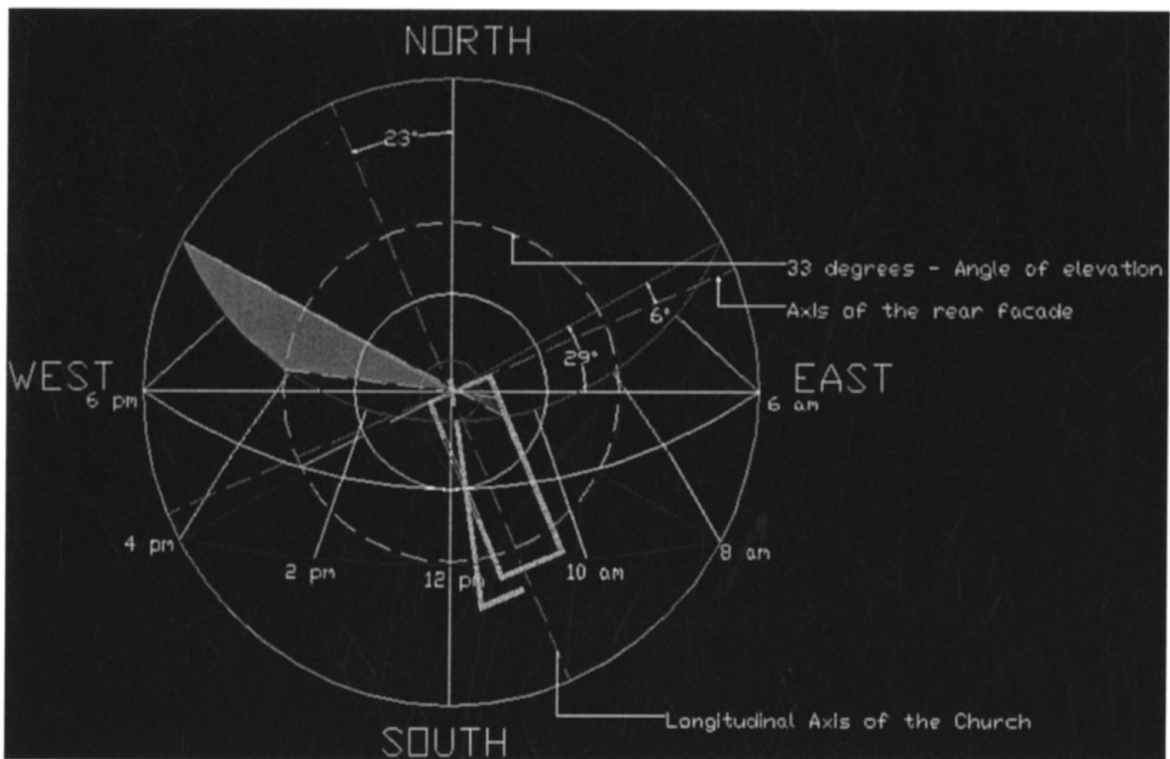


Diagram showing direct penetration through rear opening during summer solstice

rare; nevertheless, at the same time, illumination of the space is rendered possible, only through the presence of the wall surface, as has been already explained. Within this context, the wall plays a dual and ambiguous role of simultaneously permeating and intercepting light. In addition, the permeation of light is never in its raw state of existence; rather light undergoes a process of distillation and filtration prior to entering the space.

Before moving on to the next section, it is desirable to consider the significance of the Chapel interior as a single volume and briefly integrate the effect of each opening on the light conditions, which have been discussed individually in this section.

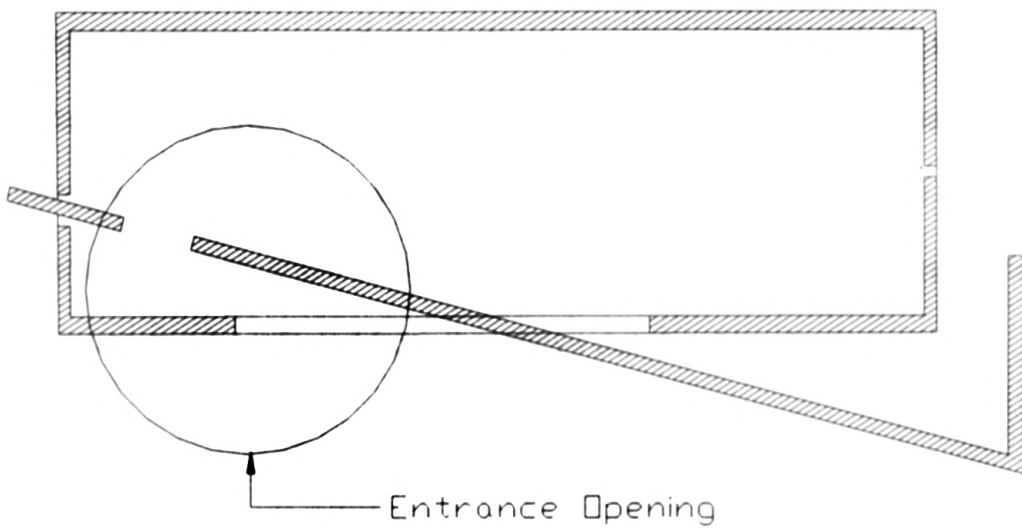
According to our analysis, the cruciform opening remains the most brightly illuminated opening within the church interior. The rest of the space is largely dominated by the presence of darkness due to the fact that most of the openings face west and none of them admit direct light. Nevertheless, there exist certain gray points, which mediate between these two extreme conditions. These are the moments in space, which are impregnated with the presence of perpetual twilight. The spatial condition of the church interior, which is delineated in gradations of monochrome, reflects Tanizaki's observation of a typical Japanese space, which he compares with an ink wash painting⁴⁹.

However, the spatial character does not remain fixed; rather space

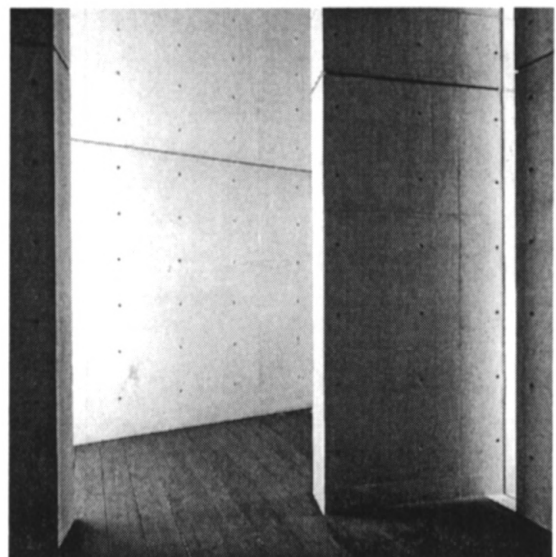
⁴⁹ " Tanizaki observes, "A Japanese room might be likened to an ink wash painting, the paper-paneled shoji being the expanse where the ink is thinnest, and the alcove where it is darkest." (Tanizaki, 1991, P. 33)

constantly evolves and manifests its existence through the continual appearance and disappearance of events, such as light and dark, with which the space itself is identified and acknowledged.

Entrance Foyer



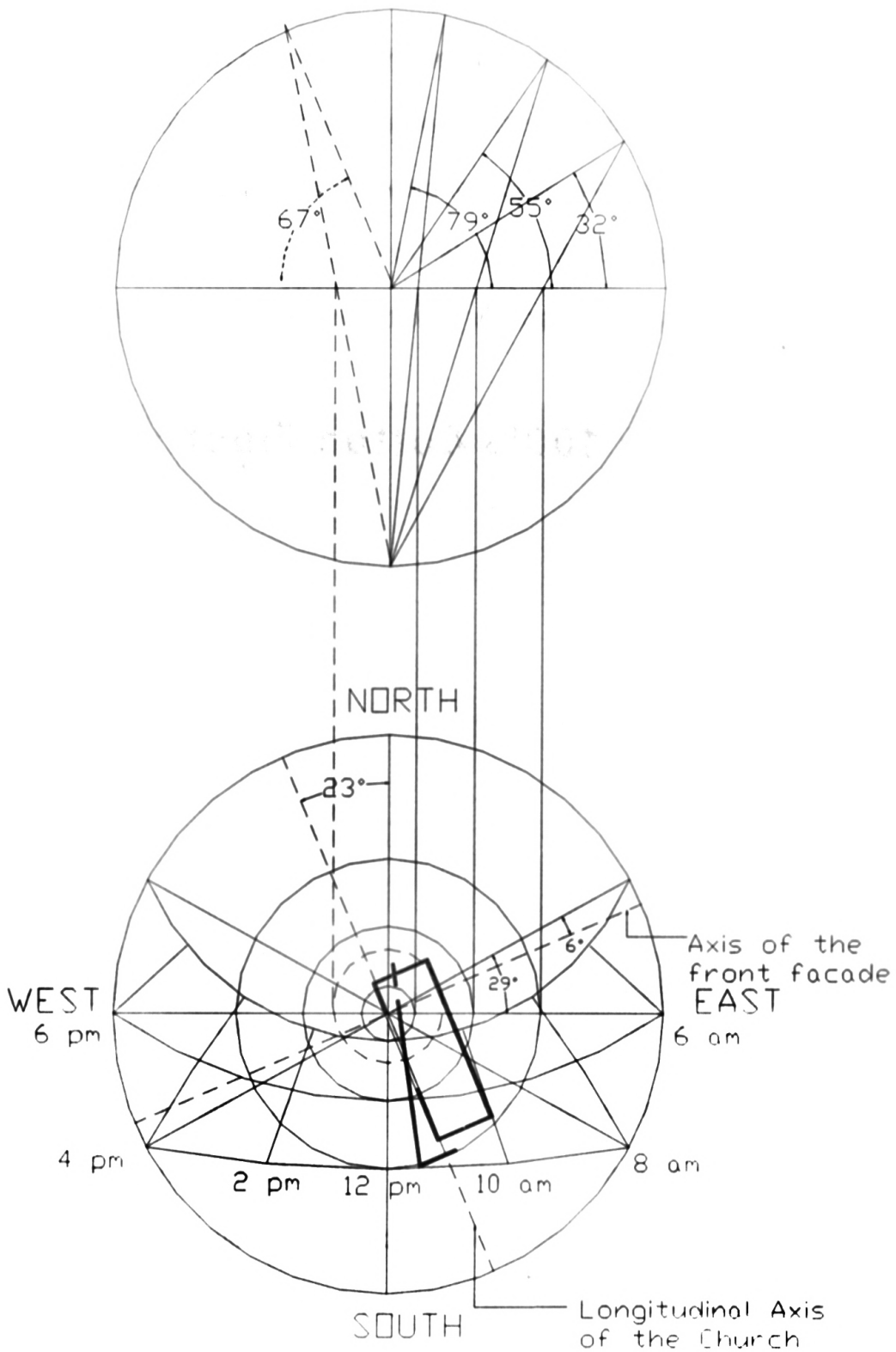
Entrance Opening
Plummer, 1995, P. 123



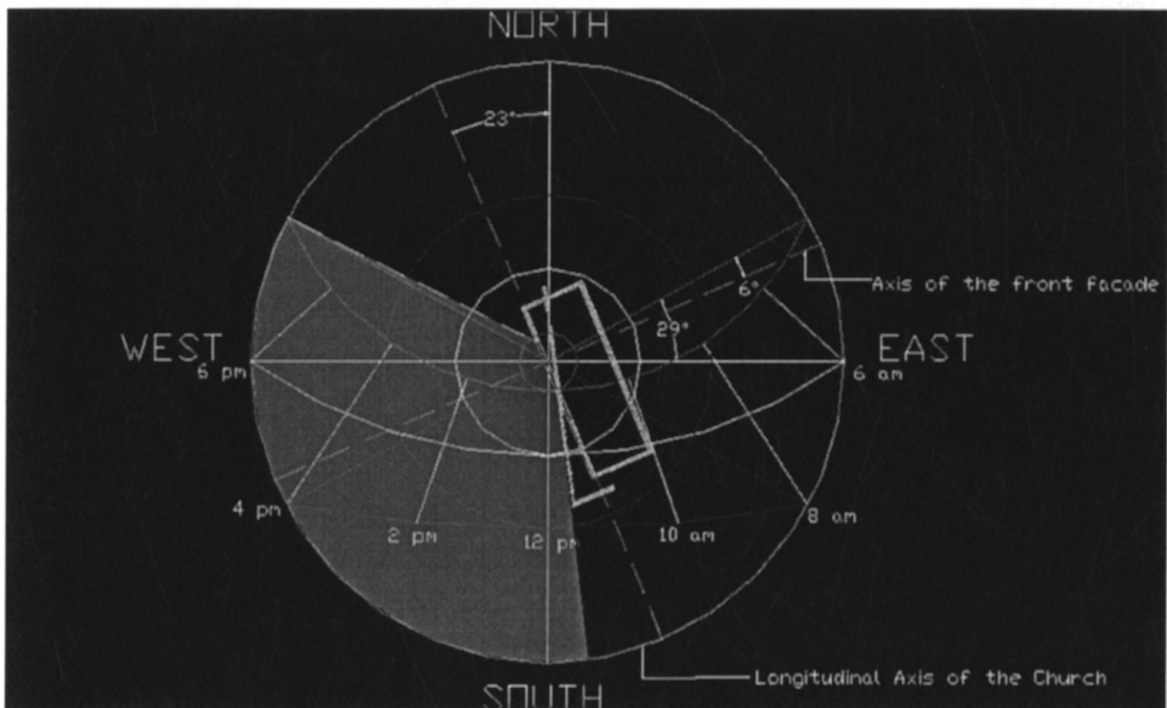
Entrance Opening
Plummer, 1995, P.122

The entrance foyer is the space of transition, which offers a buffer from the outside profane world to the inner sacred space of the Chapel. Located along the northwest corner of the Chapel, the approach to the entrance is intentionally indirect, which we will learn in detail in the following sections. The wall, which penetrates the rectangular cuboid at an angle of 15 degrees, structures two spaces within the cuboid. The triangular space along the northwest end configures the entrance foyer to the other division of the cuboid, which is established as the sacred space for worship. The entrance is maintained through a full height opening in the cuboid along the point where the wall intersects it at an angle of 15 degrees. The contingency of a constrained entrance can be inferred from the above details of the foyer.

Relative Position of the Entrance foyer with respect to the sun Path



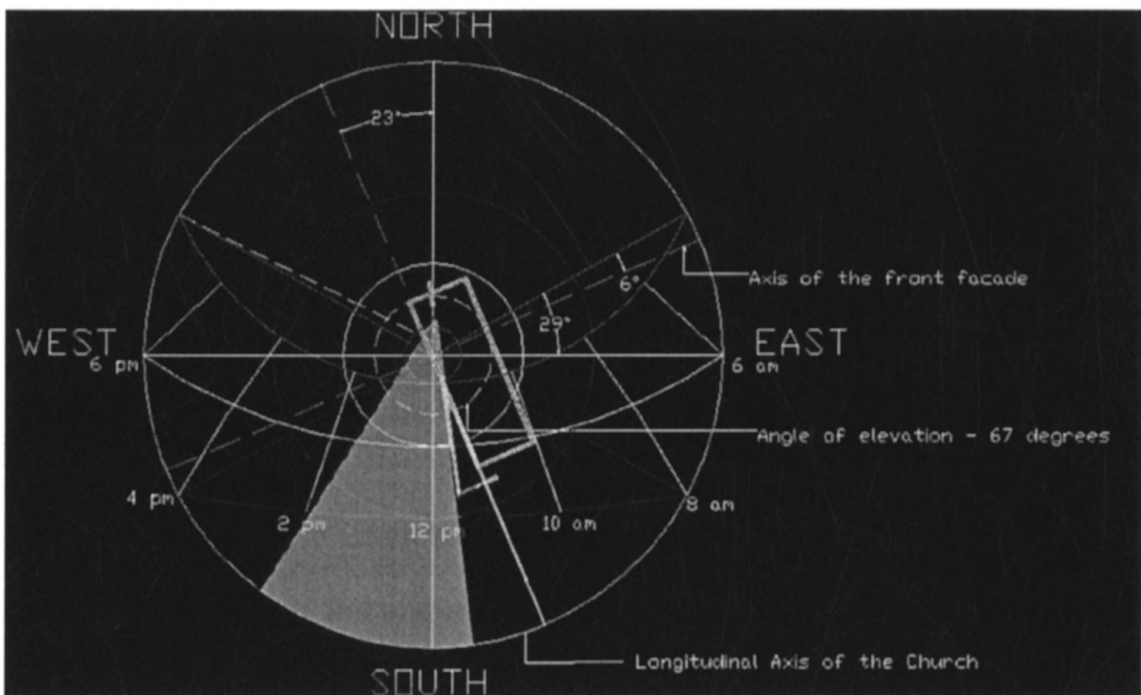
Though the foyer is located in the northwest, entrance to the foyer aligns with the west orientation, which indicates the infiltration of reflected light from the west sky during the first half of the day. Until the sun aligns with the plane of the wall surface, which penetrates inside the cuboid, the entrance foyer remains dimly lit by indirect light from the sky. During this period of the day, the rear opening, which illuminates the entrance foyer, receives reflected light from the sky, which is then redirected by the wall, into the space. The light, which finally reaches the space, is exhausted of its vigor and vitality.



The sun position, when direct light permeates through the entrance foyer in the afternoon

The orientation of the entrance foyer and geometry of the entrance and rear opening (northwest segment), synthesize a dimly lit space during the first half of the day; nevertheless, a dramatic change occurs as soon as the sun aligns itself with the wall surface, which delineates the territorial division between

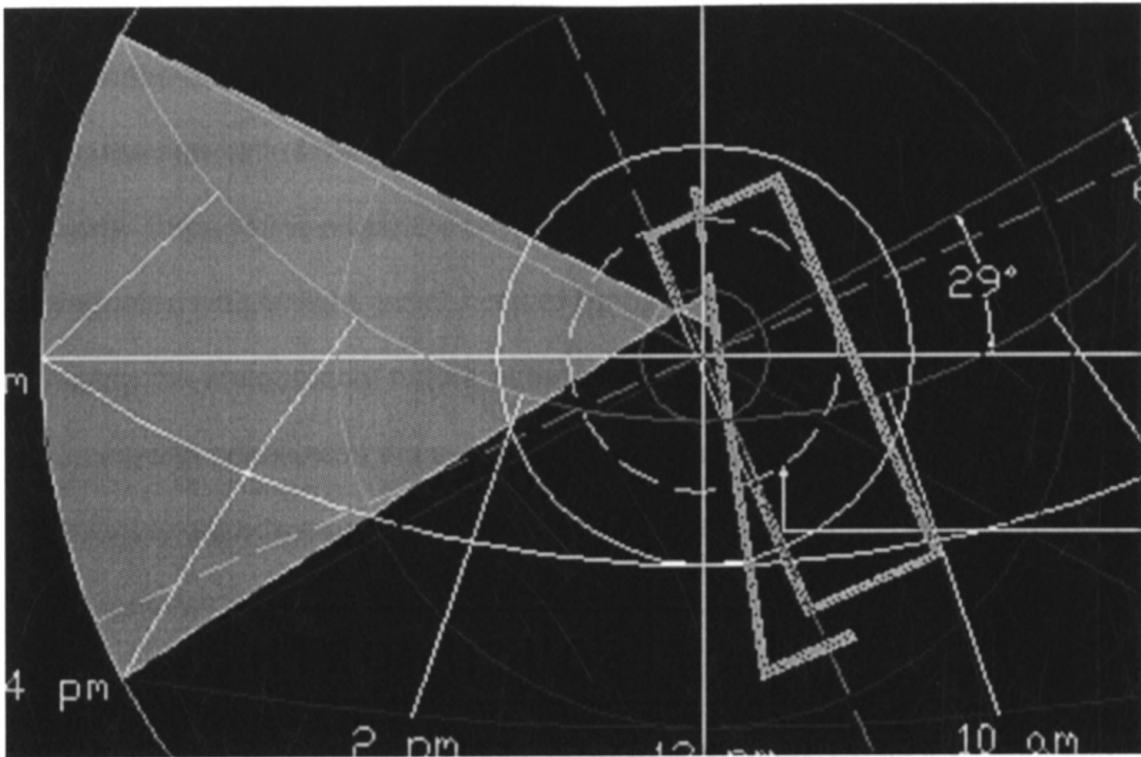
the foyer and the interior of the Chapel. The solar angle and the wall surface align along a single plane at around noon. From this moment on, the sunlight reaches the floor of the entrance foyer, the wall surface, which signifies the sudden appearance of an event, which continues until the sun drifts towards the west and gradually reduces in altitude (eventually the event of light is replaced by darkness).



The sun positions, when the sun is aligned with the entrance foyer and the inner entry to the church

At this point in discussion, it is significant to note that during the afternoon, the sun reaches its highest altitude, which indicates that the sunlight does not penetrate deep into the entrance foyer. In addition, the sun's position and depth of the foyer are not aligned, which restricts direct penetration of the sunlight deep into the foyer. It is observed, referring to the drawings, that direct the sunlight

could penetrate about half the depth of the space.



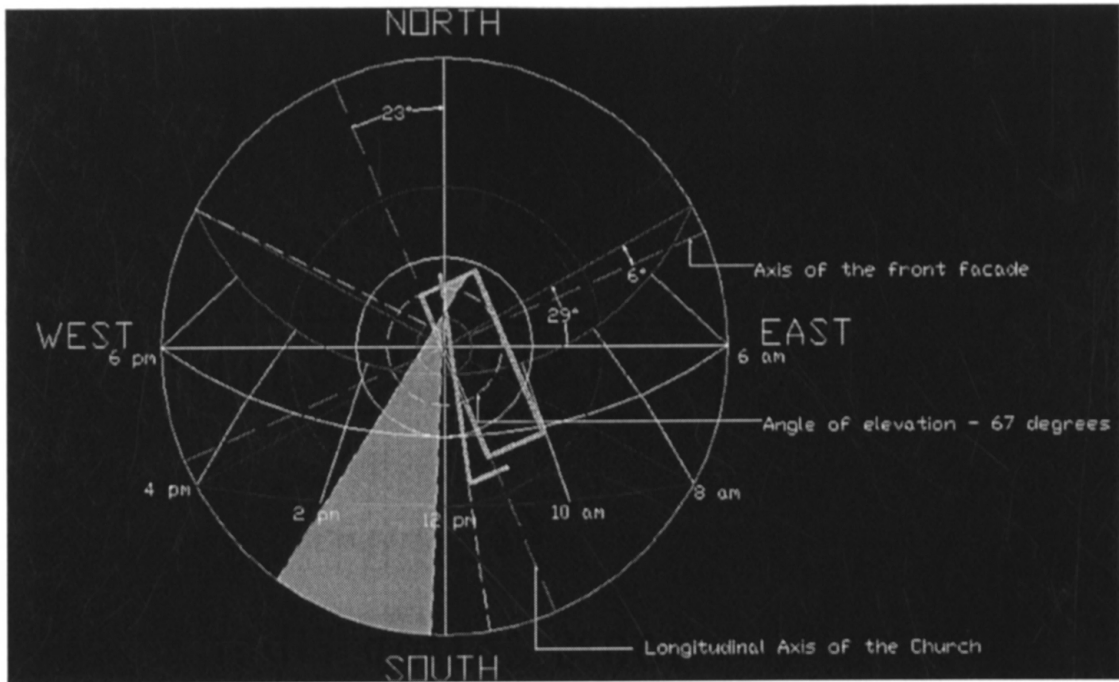
The sun positions, when the sunlight is restricted to the wall of the foyer. The wall blocks the sunrays to penetrate into the foyer

Later in the day, when the sun is at a low altitude, the sun drifts towards west. At this position, the entrance and solar angle are not aligned resulting into an indirect permeation of light inside the entrance foyer. During this position of the sun, the concrete wall surface receives the sunlight, which is further reflected⁵⁰ into the entrance foyer. Since, the entrance is constructed in glass, the sunlight could reach the surface of the inner wall, which is eventually released into the space.

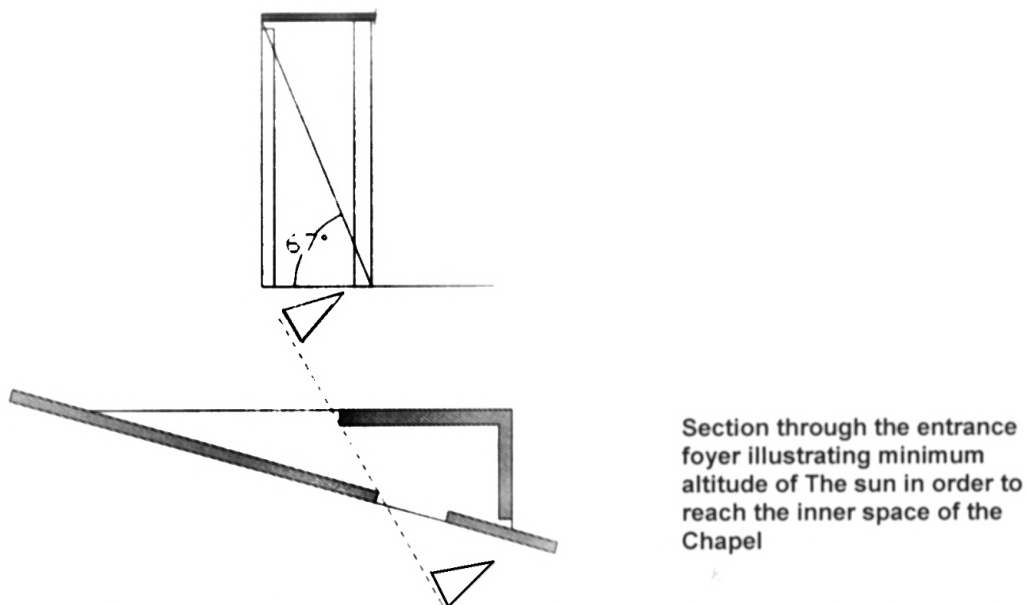
⁵⁰ It is significant to note in this context that the magnitude of light, which falls on any wall surface, is reflected on all the directions along 180 degrees of the wall. This indicates that partial magnitude of light is transmitted into intended space.

In consideration with the mode of the manifestation of idea of light in the entrance foyer, it can be construed that the space is constantly revealed as a phenomena of light. As indirect light from the southwest sky dimly lights space during the first half of the day, space presents itself as a manifestation of “sunyata” through the perpetual presence of twilight. Within this space, which is impregnated with twilight, incidences of light and dark appear and disappear, signifying the phenomenal nature of the space.

Having considered the entrance foyer as a transitional space, it is also important to acknowledge the role of the entrance foyer as an opening, through which light can permeate into the Church interior. The entrance foyer, which is illuminated with indirect light during most part of the day reflects portions of this dim presence of light into the Chapel; nevertheless, there exists few moments, when the sun’s position, the main entrance and the entry to the church interior align, which could allow direct the sunlight to pass through (fig above). However, this condition arises only during the afternoon, when the sun is at its highest altitude, which does not allow for a deep penetration into the space (minimum angle needed is 67 degrees). Therefore, the sunlight never directly penetrates into the Church interior through the entrance opening (except momentarily in winters); nevertheless the entrance foyer behaves as conduit for light, reaching the interior space of the Chapel only after losing all vigor and color along the gray concrete surfaces—the wall and floor surfaces—of the entrance foyer.



Position of the sun at direct alignment with entrance foyer and entry to the inner Chapel



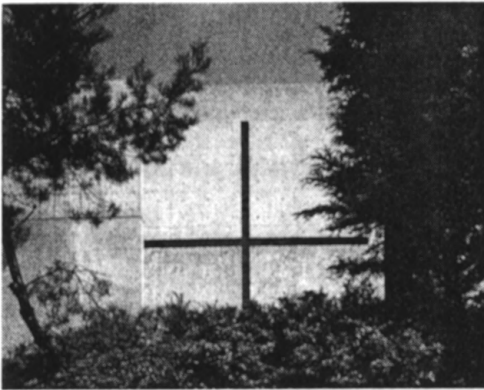
After dealing with the factual and an objective analysis of the behavior of openings with respect to orientation and geometry and their effect on the manipulation of light, the next section analyzes the interaction of materials and light. In addition, it deals with the geometry of the entire form, which confronts

light in order to generate or make apparent facts or beliefs, which directly address the Japanese cultural inspirations. It will be eventually observed, as we will go deeper, that the idea of materiality is juxtaposed between the felt and factual aspect of presence. This observation renders this segment of analysis partly subjective in nature.

GEOMETRY OF FORM AND MATERIALS

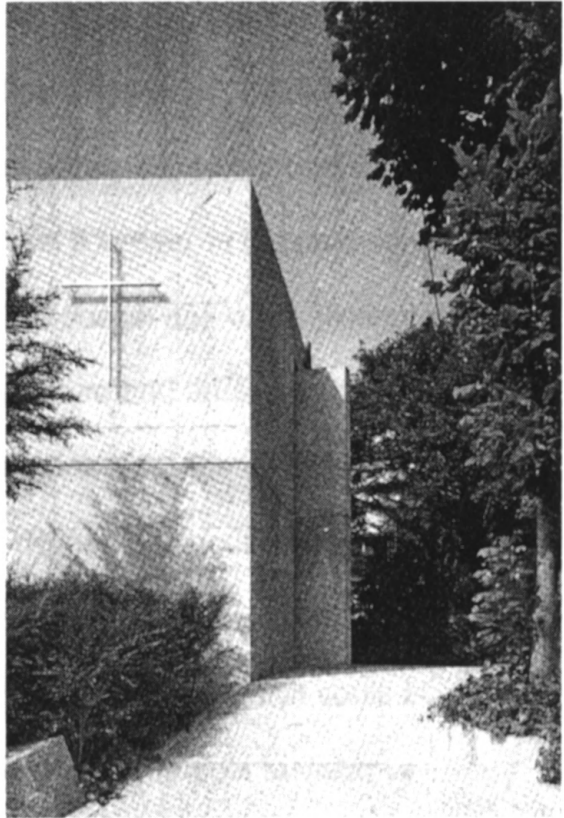
The geometry of form and structure of the Chapel has been discussed in the previous section. This section deals specifically with the idea of the inter-relationship between the form and light. It explores the meanings generated through the delineation of a tangible form with respect to intangible elements of light and shadow. In between the expressions of form and light, material appears as an element of articulation. This section explores in detail the synthesis of meanings manifested and communicated through architectural constructions in form, light, materials and their logical structure.

EXTERIOR FORM



Southeast View of the Church

(Slessor, 2000, P.57)



East View of the Church, (Drew, 1996, P.24)

The Church of the Light is revealed to the visitor as a simple cuboidal

structure, which is surrounded by pine trees and thick vegetation along east and south edges. Although apparently a static and simple structure, angled orientation of the Church and the wall, which pierces through the cuboidal structure, assign certain dynamism to the form. The dynamism is not restrained to the structure but extended further to include phenomena of nature in the form of light, which has been discussed in the previous section.

Reverting back to the notion of simplicity expressed in the exterior of the Chapel, it is observed, that the simplicity of the form confirms to the Zen idea of "elimination of non-essentials" (Suzuki), which has been referred as a minimalist design approach by several critics. Nevertheless, it is the guiding force of the Zen idea of eliminating all that does not contribute towards the higher intentions of generating meanings. Revealing itself as simplest of structures, the Church simultaneously, appeals to minimalists, modernists, and the traditional Japanese way of life. However, the higher ideal, which it serves, is the presentation of form, which transcends its own image. This design approach eliminates the sculpturesque tendency in present architecture and refuses to participate in consumerist practices prevalent in contemporary Japanese society.

The concrete wall surfaces, which delineate the cuboidal territory of the Chapel, are plain and blank. These expressionless walls appear as even surfaces without any dramatization of light and shadow, which could accentuate 3-dimensionality and surface depth. Ando, in his attempts to distance architecture from being a mere visual pleasure, relates it to the idea of living

process. Rather than intending an objectification of architecture through emphasizing material construction, Ando intends to transcend the idea of form while absorbing the notions of a phenomenal space through inclusion of natural elements. Within the intention of simplification of form lies the idea of directing attention towards meanings of existence through elimination of futile and frivolous objects.

Before moving to an analysis of the interaction of form and light, it is desirable to understand the characteristics of the construction materials and their role in the process of the manipulation of light.

MATERIALS

The application of limited materials and a vocabulary descending from modern linguists characterize Ando's architectural endeavors. The structure of the church is built entirely in exposed reinforced concrete, which is said to be the signature material of Ando. Furniture and the flooring of the church are constructed in wood, while openings display use of clear glass, which is approximately 16 mm thick. Ando prescribes a certain formula⁵¹ for the kind of concrete, he employs for his buildings. The resulting concrete surfaces are not rough and uneven. The concrete slabs constitute surfaces, which are smooth and glistening and which maintain a dialogical relationship with light.

In the following observation, Ando identifies the characteristics of concrete, which varies with each use,

"... Concrete possesses many variables. Every concrete mix and pour has a different character. It is not like steel or glass, which has a more consistent nature. Concrete can vary greatly. Concrete has a depth of expression that changes with every use. Le Corbusier used concrete as if it were clay. He used its plastic quality almost as if he were sculpting. Louis Kahn used concrete as if it were hard steel" (Ando, 2002, p. 59)

In line with this observation, the concrete, which delineates the microcosmic domain of the Chapel, retains a smooth and consistent surface, which maintains a two—fold dialectical relationship with light. In the presence of

⁵¹ Frampton states the formula for Ando Concrete in his essay, "Tadao Ando and the Cult of Shintai", Concrete of this quality depends upon the exercise of strict discipline involving, among other 'mysteries': first, the use of an engineering grade concrete mix, having a slump-test reading of 6 3/8 inches as opposed to the standard 8 inches; second the maintenance of reinforcing bars at no closer than 1 1/2 inches apart; third, the thorough vibration of the pour and last but not least, the creation of a perfectly watertight mould, without which the surface of the concrete is weakened and subject to fracture. (Ando, 1995, P. 490)

light, the concrete surface does not appear to stand in opposition; rather, the gray surface of the concrete seems to be enveloped in light and assumes a translucent sheen or "watery luster"⁵², which seems to dissolve its very existence. This characteristic of concrete can be compared to Japanese paper, which Tanizaki characterizes,

"As which takes in light, envelopes it gently, like the soft surface of snowball." (Tanizaki, 1991, p. 20)

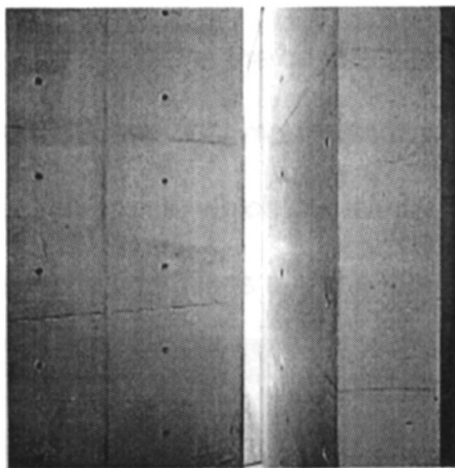
This process indicates a metamorphosis of the concrete surface in the presence of light, which tends to dematerialize it, while simultaneously transforming the presence of light through a mutual interaction between concrete and light. The gray surface of the concrete absorbs any color explicit or latent in light and neutralizes the presence of light. In addition, light loses any warmth or intensity in the coldness of the concrete. The idea of light, which is reflected, retains only a pure image of illumination evoking an idea of twilight.

It is observed that light and concrete maintain a dialectical relationship, which contributes to the mutual transformation of both elements. Materiality of concrete is challenged in the presence of light and it becomes a presentation of a harmonious relationship; rather than a notion of dominance, which is associated with stone or masonry construction. Within this context, concrete, which manifests as a suspended notion between materiality and immateriality in the presence of light, evokes the idea of "MA". The ambiguous identity of concrete, which is emptied of any meaning through an interaction with light, sustains the

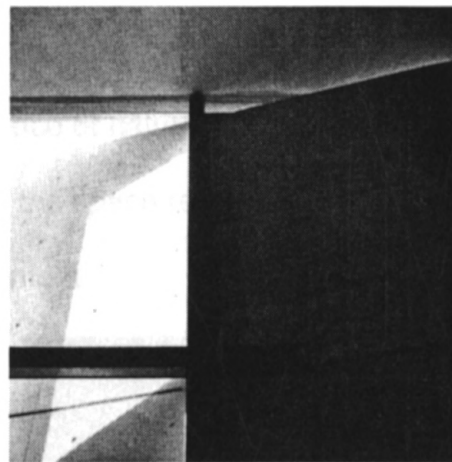
⁵² Plummer, 1995, P. 204

idea of co-existence of “sunyata” and “tathata”, which follows from the Zen idea of A is non-A.

Dematerialization of concrete, which is achieved through precise mode of interaction between concrete and light, is very different from the idea of dematerialization in Gothic cathedrals. Dematerialization in Gothic cathedrals springs from the idea of declaring the dominance of light and eliminating any speck of shadow; rather than pursuing the harmonious coexistence of matter and light in space.



Glass-like concrete surface
(Plummer, 1995, P.123)



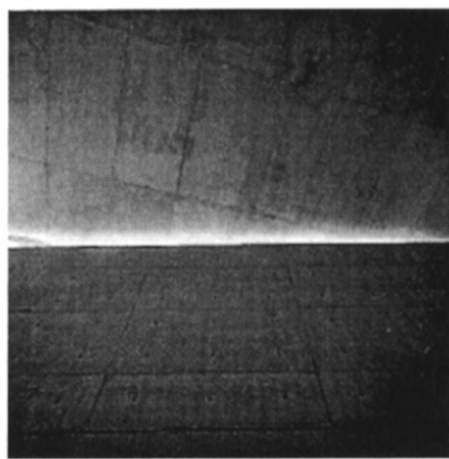
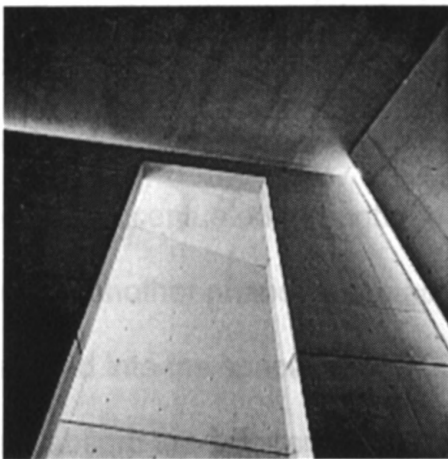
Concrete rendered in light and dark
(Drew, 1996, P.46)

The interior of the church is also exposed reinforced concrete but it is coated with latex, which creates an extremely smooth surface. Light seems to spread on its surface rather than being reflected, which generates concrete surfaces glistening with a layer of light. In the following passage, Ando states his intentions, which become instrumental for a distinct use of concrete,

“ Concrete is the most suitable material for realizing spaces created by rays of the sunlight. But the concrete I employ does not have plastic rigidity or weight. Instead, it must be homogenous

and light and must create surface ... (so that) Walls become abstract, are negated, and approach the ultimate limit of space. Their actuality is lost, and only the space they enclose gives a sense of real existing." (Ando, 1982, P.12)

Light, which permeates the interior of the Chapel through openings, which have been discussed in the previous section, render the interior wall surface glowing with a layer of light. These illuminated wall surfaces negate themselves, produce a prototypical space and extend beyond the delineation of physical boundaries. Adding to the perception of space is the percolation of green light, which filters in through the cruciform opening. The layer of green light not only generates depth⁵³ in the concrete surface, but also renders abstract the presence of space. Green light manifests the presence of nature within the confinement of the Church space, which constantly alters the space responding to the atmospheric conditions and the sun movement.



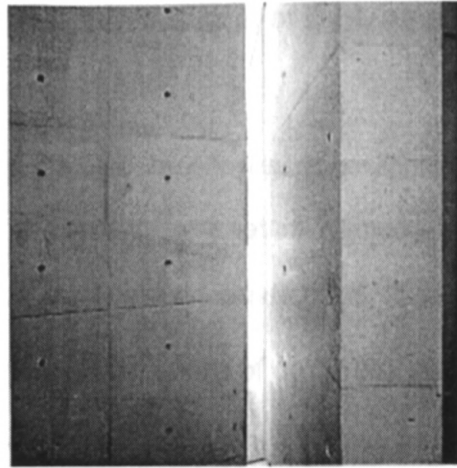
Light seeping into the space from the ceiling gap (Plummer, 1995, p.123)

Another significant source of light modulation is an inter-relationship

⁵³ Ando says, "... Concrete implies layering of many subtle colors, ... [which] enhances its depth ... Color is best used when it suggests depth ... (Ando, 2002, p. 34)

between the geometry of openings and the materials. In all the openings, which have been discussed in the previous section, reflected light from the concrete surface of the walls presents as a significant source of illumination within the Chapel. These wall surfaces, while metamorphosing in the presence of light, simultaneously transform the properties of light. The gray concrete surface neutralizes the color and warmth in light, rendering an abstract notion of light, which can be compared to the idea of "sunyata". The idea of "sunyata", in this context, indicates that the existence of light is negated and accepted simultaneously, which evokes the presence of *en* space.

With respect to the modulation of light, these concrete wall surfaces find their parallel in the shoji screens of traditional Japanese architecture. Shoji screen panels, which modulate light through a two-fold process of refinement, do not negate light; rather every speck of light is identified and absorbed in them. Through this process of assimilating surrounding light, shoji screens manifest as a source of light, in the darkened interior of Japanese space. Whiteness of the screens is accentuated through the presence of layers of light on its surface. However, another phenomenon acts simultaneously, in which light, which is permeated into the space through shoji screens, is diluted in intensity. Shoji panels absorb the color and warmth present in the light and render light to be observed as neutral, which is reduced to a pure image of illumination.



Shadow of the trees on the walls (left) and concrete surface reflecting the surroundings (right)

Another phenomenon, which aligns the concrete surfaces to the traditional shoji panels, is their manifestation as projection screens. Glass-like concrete surfaces, in addition to metamorphosing in the presence of light, are presented as projection screens, which register the changes in the light conditions through atmospheric variations, seasonal changes or the sun movement in the sky. In addition, these walls hold the shadows of trees, reflect the color of surrounding vegetation and so on. These plain wall surfaces are animated by events of light and shadow, which constantly alter, shift and disappear. Against the background, which signifies an idea of emptiness in the presence of light, these events of light and shadow indicate the theatrical presentation of Zen philosophy of “sunyata” and “tathata”. Architecture negates the idea of objectification by eliminating 3-dimensionality; rather it consistently strives to signify living phenomena, rendered possible through establishing a dialectic relationship with nature.

Acknowledging the presence of nature in the form of light, as a characteristic of his works, Ando observes, "The strong nuances of simple materials and their textures emphasize simple spatial compositions, and thus provoke an awareness of a dialogue with natural elements, such as light and wind. In all of my works, light is decisive in forming space." (Ando, 1995, P. 444)

Philip Drew indicates to the phenomenal aspect of concrete surfaces, "Light is invited to play across the surface of the concrete, constantly revealing, as it moves, the ever-changing interdependency of light, climate and season across time" (Drew, 1996, p.12)

The idea of maintaining a dialogical relationship with nature through erecting projection screens, which confront the observer with the natural phenomena of changes, finds its parallel in the compositions of the shoji screen panels of the past. Shoji screen panels, which hold shadows of nearby trees and which respond to the changes in light conditions, are composed at eye levels so that the observer may perceive and interact with nature. Plummer observes the characteristics of shoji panels, which project the momentary existence of shadows,

"Radiant paintings and trembling shadows appear for a moment on the empty projection screen, the diaphanous paper brushed and spattered with light rather than pigment" (Plummer, 1995, P 352).

The idea of transience, which nurtures Japanese culture profoundly, finds an explicit expression through shadows rather than light.

Having discussed the notions of immateriality and transience reflected in concrete, relationship between light, material, and form emerges as the next point of discussion. The concepts of successive observation and frontal

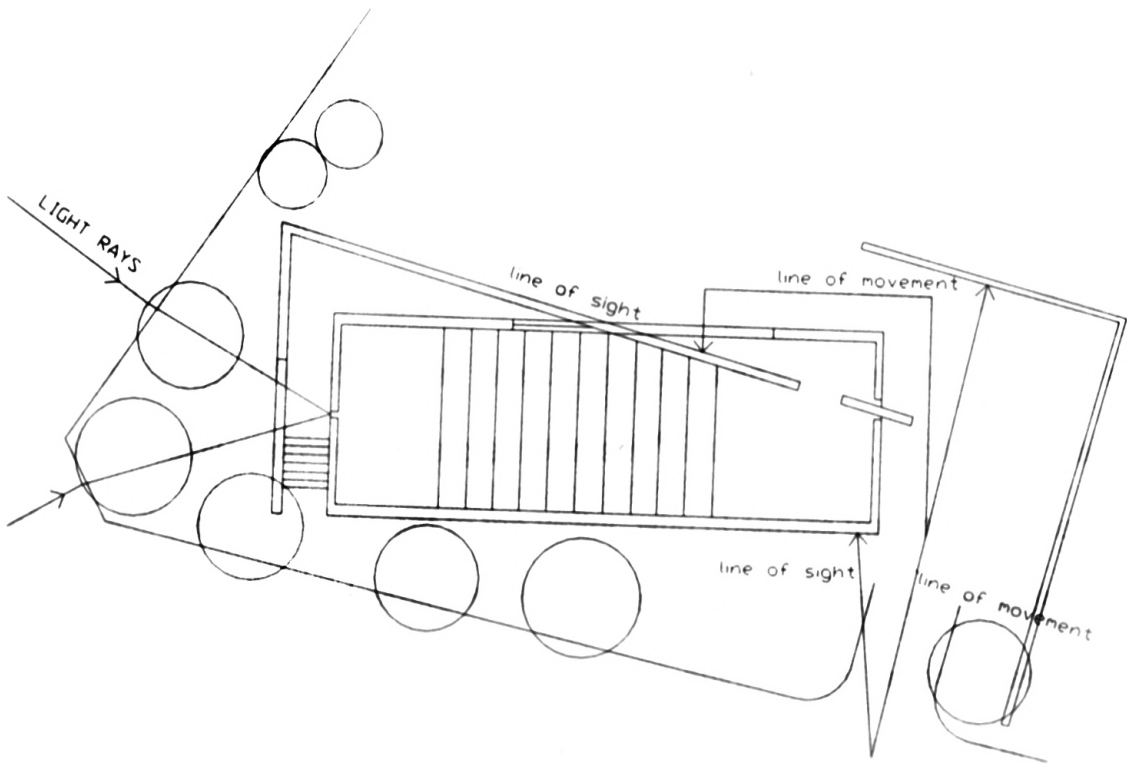
composition are the fundamental logic behind the spatial organization of the Chapel.

Composing rigorous and precise syntax of the orientation, geometry and materials, contributing towards the manifestation of meanings, which lay the foundations of an autochthonous culture, while surviving through the demands of the modern age, realizes its purpose only when the meanings are effectively communicated. For this objective, architecture becomes an instrument, which simultaneously generates meanings, and conserves and conveys them to the observer. Ultimately, it is the human element, which integrates the entire process and fulfills the aspirations by imbibing what has been communicated.

Ando reflects this idea in the following quote,

" The human element is the key that ties it all together. A great building comes alive only when someone enters it." (Ando, 2002, p. 25)

The concept of successive observation and frontal composition become instrumental in achieving this intention by structuring spatial components, which effectively communicate the meanings generated. In line with these concepts, spatial components are arranged in a sequence, which are revealed successively. This composition constructs a series of spaces, which are based on concept of "here and now", which indicates that the observer is forced to concentrate on one event at a time. Through a certain geometrical composition, the forthcoming event is neither revealed, nor can it be anticipated. The diagram below explains this spatial structure in the Chapel by indicating movement of the observer through spaces.



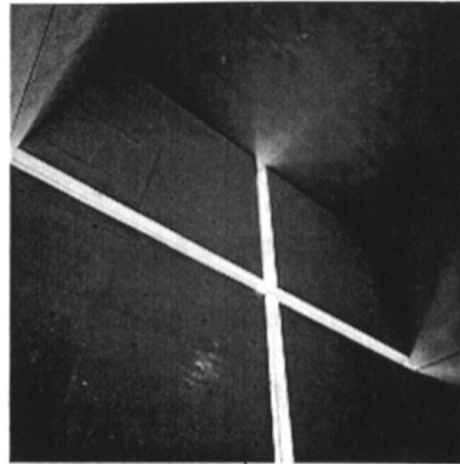
Schematic diagram representing line of sight and line of movement in order to reach the church entrance

Another concept, which is complementary to the spatial composition of successive observation, is frontal composition. Through frontal composition, concrete surfaces, on which events are delineated in a theatrical setting, confront the observer perpendicular to the line of sight. In a frontal composition, architecture does not appear as a 3-dimensional entity; rather it is revealed as 2-dimensional images to the observer. This spatial configuration is seen in the above diagram, in which the observer is confronted with 2-dimensional concrete surfaces in a successive order. This typology of space is in line with the Isozaki's incisive observation of traditional Japanese spaces in which he notes that Japanese spaces are 2-dimensional structures through which two or more time

scale runs. The observer encounters 2-dimensional surfaces in a sequential order, which present momentary events of natural phenomena to the constant attention of the human senses.

A fine illustration of successive observation through frontal composition is cited in the wall, which projects beyond the rear opening. This wall assumes ambiguous characteristics of an interior as well as an exterior wall simultaneously, representing a gray element⁵⁴ in the Church. Both the surfaces of the wall are made apparent to the visitor, who observes the east surface while entering the Church and confronts the west surface while exiting. In addition, both the east and west surfaces of the wall are animated by the successive appearance of light and shadow, which corresponds to the alignment of the sun with the wall. The single entity of the wall manifests the phenomena of light through a frontal composition, which is apparent not only with respect to space but also time. The identity of the wall as a material entity weakens in the process of phenomenalization of the wall as an instrument to communicate the idea of transience and emptiness, which build the fundamental structure of Japanese culture.

⁵⁴ Suggestive of en



Frontal composition of the cruciform opening within the church interior
(Plummer, 1995, P.124)

Another excellent example of realizing a phenomenal space through frontal composition is observed in the cruciform opening. On its exterior, the opening presents a figure-ground relationship with the concrete surface. The dark void of the opening against the translucent surface of the concrete wall informs of dualism; however this contrast of light and dark does not accentuate any sculptural effect; rather, it presents a pictorial image, in which the composition is dissolved into a 2-dimensional surface. In the interior, the cruciform opening appears as an embodiment of light, which is set against the dark background of the concrete surface, generating a 2-dimensional composition. However, this composition of dark and light transcend the materiality of the wall, in which the wall manifests as a rendering of the cross of light emerging out of darkness. Throughout the course of day, the cruciform opening undergoes a tremendous transformation, which is communicated through a frontal composition to the observer.

Japanese spatial cognition is structured through phenomena occurring in time. The above factual and objective analysis of orientation, geometry, materials, light indicated the synthesis of space through dynamic expression of events (tathata) in time, which brings the syntax of the construction closer to Japanese cognition of space and time. This analysis prepares us for the next step, which brings in the concept of Shintai into the syntax. In the analysis of the form, the significance of the human element was realized in integrating the fragmented 2-dimensional surfaces. The next section is an attempt to perceive spaces successively corresponding to the movement of an observer. This section constitutes a qualitative analysis of the sequence of spaces delivered by the phenomenological occurrence of light and shadows in a space informed by "sunyata" of twilight.

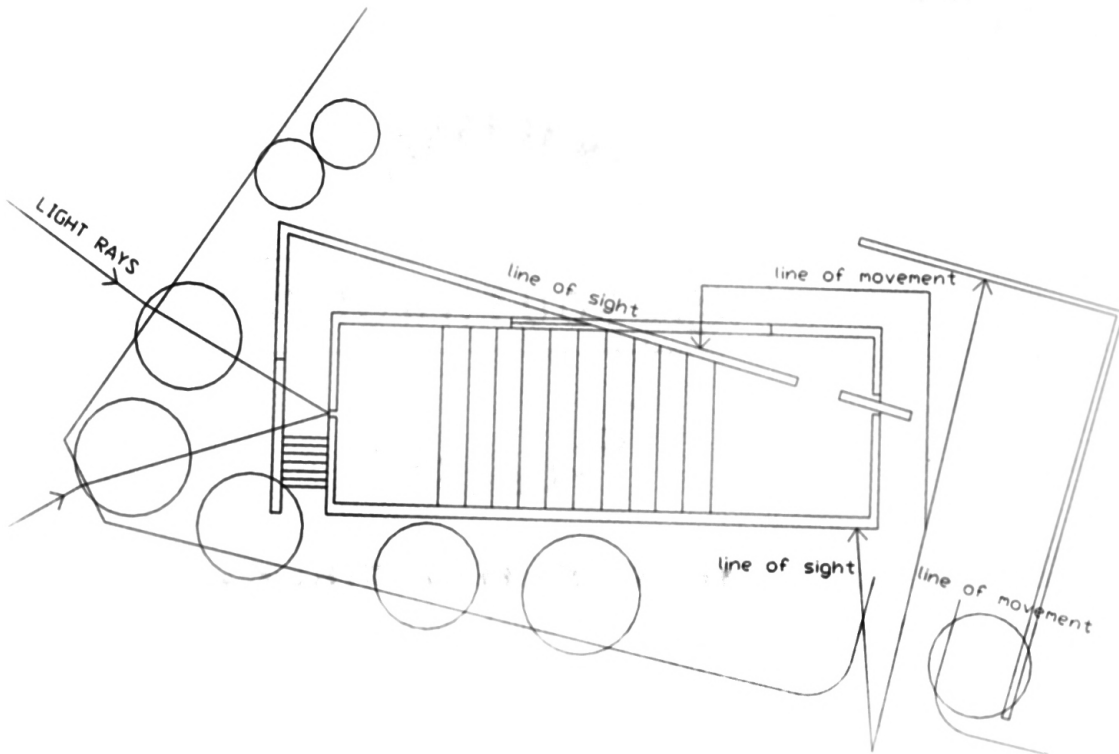
SPACE AND SHINTAI

In a movement-oriented space, space is revealed in succession. Within the spatial organization of the church, it is observed that distinct spaces are revealed to the visitor in a successive fashion. This will be more clearly understood when the Chapel is compared to a traditional Christian church, which has a grand entrance and a path, directed towards the altar. The entire composition is clearly manifested in front of the observer. There is no intellectual process of integrating events in mind. On the contrary, the Church of the light is constituted of fragmented spaces, composed through indirect, twisted and roundabout paths, which are observed successively. This spatial configuration, which is identified by Inoue as a characteristic of traditional Japanese spaces, is a deliberate effort to create certain meanings in space. Mitsu Inoue observes, "Deliberately twisting a path that could be straight and cover the shortest distance is certainly not a rational design solution, but like the arrangement of interior spaces, it was an expression of a certain attitude toward space". (Inoue, 1985, P. 165)

The phenomena of light and shadow are complimentary to this spatial organization.

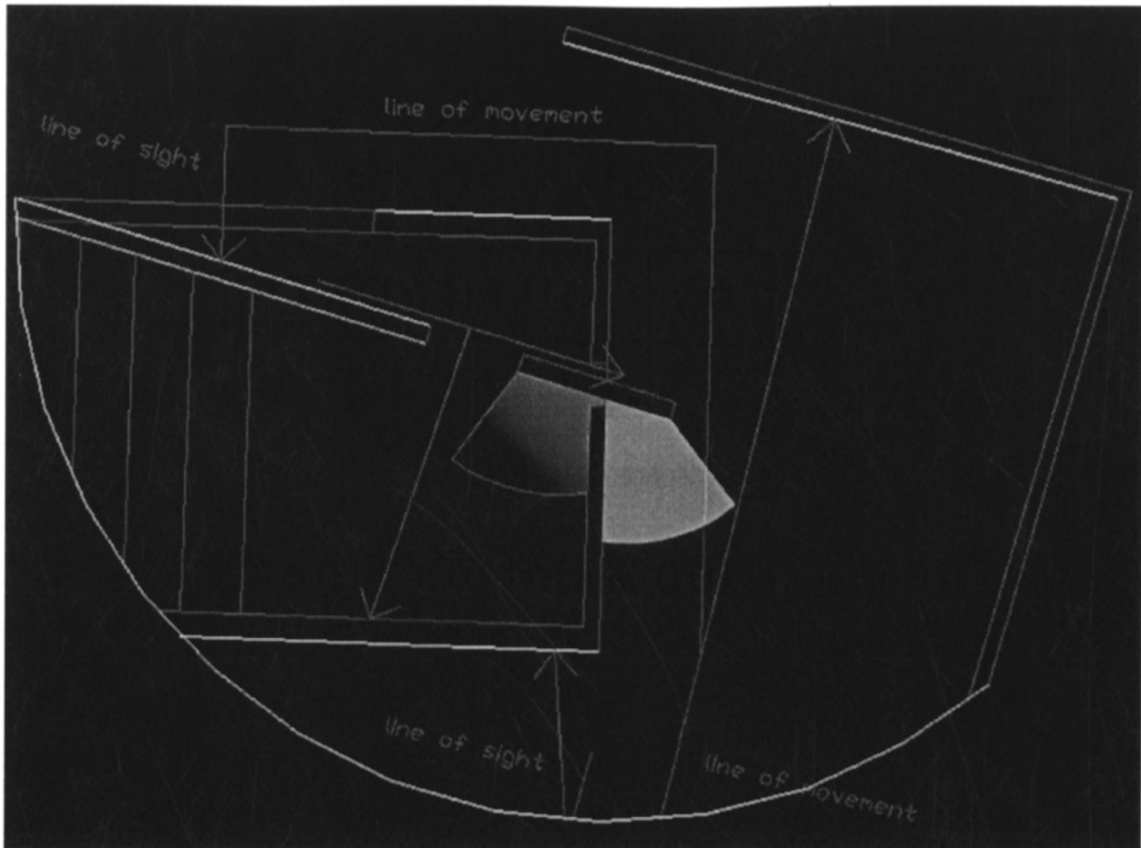
The entrance to the Church of the Light is indirect, hidden and deliberately twisted. The Church complex opens on the northeast street, from where an L-shaped wall directs the observer to the rear of the church. Turning left, this wall further leads towards south, where on the left side, the observer discovers the main entrance to the Church. This delineates the most unexpected entrance for a Church. In the previous section, we had discussed the successive views of the

2-dimensional concrete walls, which render possible observation of phenomena generated by light and shadow projected on wall surfaces.



Schematic diagram representing line of sight and line of movement in order to reach the church entrance

The entire spatial structure, the composition of planes and movement of Shintai is in line with the characteristic of movement-oriented space, which is purposefully composed to generate experiences. Comparing this spatial composition to a Japanese stroll garden, Inoue cites the characteristics of a stroll garden, " A stroll garden was not like the garden of a shinden-style residence, which was viewed sitting inside the house, but was a garden through which the observer actually walked. (Inoue, 1985, P.166)



Schematic diagram representing line of sight and line of movement within the entrance foyer

The geometry of the entrance is triangular, which is created by the wall dividing the rectangular cuboid of the church into two distinct zones. The entrance delineates transitional space between the outer world [profane] and the inner world [sacred]. This triangular space opens along its acute end, which is describing an angle of 15 degrees. The body slides through this acute opening, which does not appear to consider any anthropomorphic proportions.

Nevertheless, through this constrained geometry, the entrance becomes the point, where the human body measures itself against a hard concrete surface. Shintai, which Ando explains as the union of body and mind and realizes its existence through a complete sensory experience. The delineation of such an unusual entrance for a Church, which is designated as a public building, finds its

cultural parallel in the entrances designed for teahouses. The entry to a teahouse, which is called nijiriguchi, is exceptionally diminutive in proportions, through which a visitor cannot pass without being aware of his body or Shintai. The entire composition of approach, entrance, and unfolding of architecture into a sequence of events (projected on concrete surfaces), can be compared to the spatial configuration of the teahouse. Similar to the approach to the entrance of the church, teahouse is approached by an extremely twisted path, which is punctuated by unexpected scenes and views at specific line of visions. An extremely diminutive opening (nijiriguchi), surrounded by an space, delineates the entrance to the teahouse, which again corresponds to the extremely acute opening of the entrance to the church.

In the morning⁵⁵, reflected light received from the rear opening and indirect light from the southwest sky dimly lights the entrance foyer. This indicates a relatively dark interior for the entrance foyer during the early half of the day. The observer, who has just managed to slide through the entrance opening, encounters a small triangular foyer, illuminated by a slight light seeping through the rear opening and the entrance opening. However, simultaneously the observer is made conscious of complete sensory awareness, which is generated through an interaction with dark space of the foyer. A darkened interior prompts Shintai to access its complete sensory power to identify and orientate in the space.

⁵⁵ church is mostly operated during the first half of the day

Within the entrance foyer, along the alignment of the rear opening, the observer confronts the exterior space, which has been just crossed. Within this context, the rear opening becomes an opening, which connects the interior space with the exterior through a visual connection of the two spaces. In addition, it becomes a moment in space, which directs the visitor back to point of beginning, to the exterior of the church.

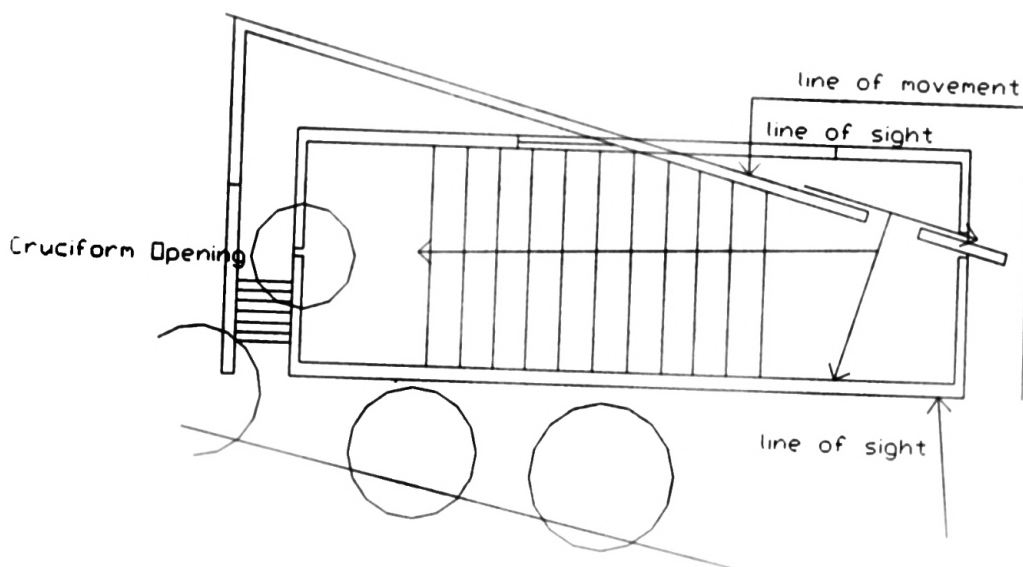
It can be concluded from the sequential revelation of unexpected spatial compositions that the phenomenalization of architecture transcending its material structure, is the prime intention in the spatial structure of the Church. The dynamic transformation of spaces are constituted to be perceived and integrated by a mind, which is made aware of sensory abilities through processing a precise syntax of geometry, orientation, materials and light.

A 90-degree turn to its right aligns Shintai with the entry to the main body of the chapel. From this position in the entrance foyer, Shintai perceives merely a fragment of cuboidal space wrapped in darkness.

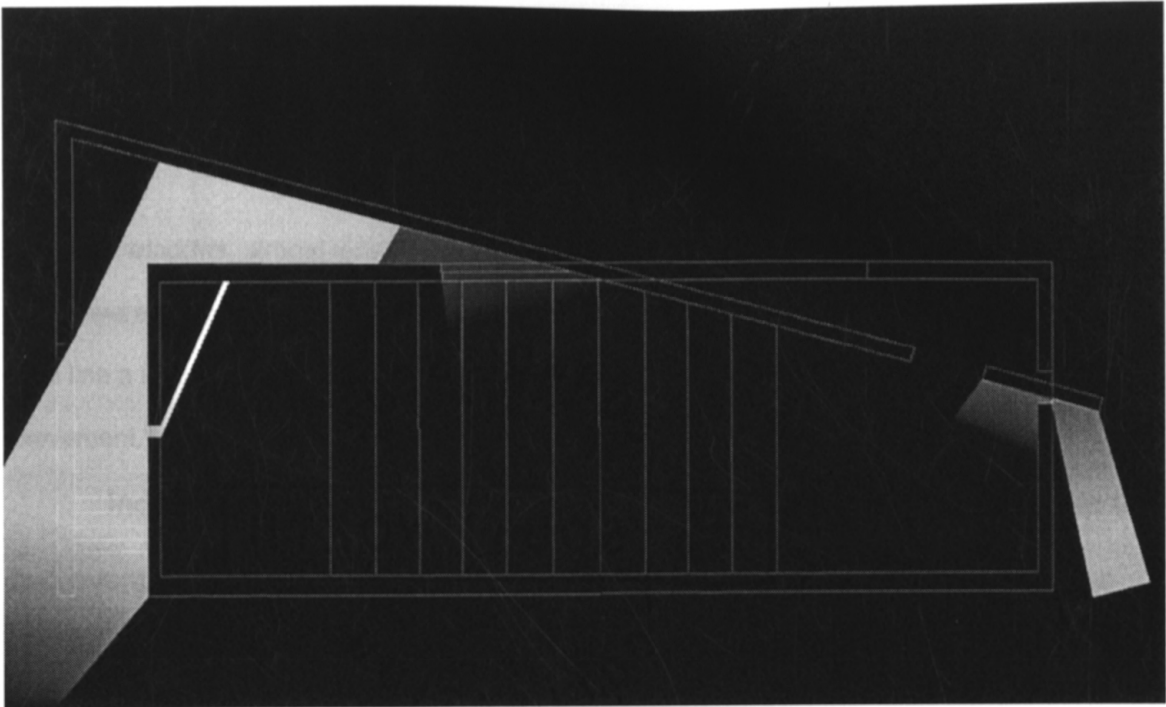
However, at this point reflected light is permeated into the space through the rear opening. Light, which is reflected by the wall into the space is filtered and refined by the concrete surface, which absorbs the color and intensity of the light. Space, delineated by the circumference of radiated light from the wall, is impregnated with the presence of twilight. This is a moment of "sunyata", which is punctuated between spaces of darkness (entrance and the segment of church interior). This moment of emptiness establishes the transitional point from the entrance foyer to the sacred interior of the church. In addition, the moment of

emptiness offers respite to the spirit, which is in the process of addressing and acknowledging its sensory awareness, awakened through a rigorous geometry of the entrance foyer. Inspiring contemplation and introspection, this quite moment generates a moment of suspension through the presence of twilight, which reveals an emptiness or interval in time and space.

Perpendicular to the entry into the Chapel, the observer confronts a blank wall, which is completely enveloped in darkness. The surrounding space is relieved of heavy darkness only by the indirect light percolating through the rear opening. Opening of spaces through extremely twisted paths prompts queries in the minds of observer, who is, at this point (immediately before entering the interior of the chapel) made completely aware of body, mind, spirit, and senses through subjecting himself to rigorous experience of spaces.



Schematic diagram representing line of sight and line of movement within the Chapel



Representative sketch depicting behavior of light within church interior at a particular instant

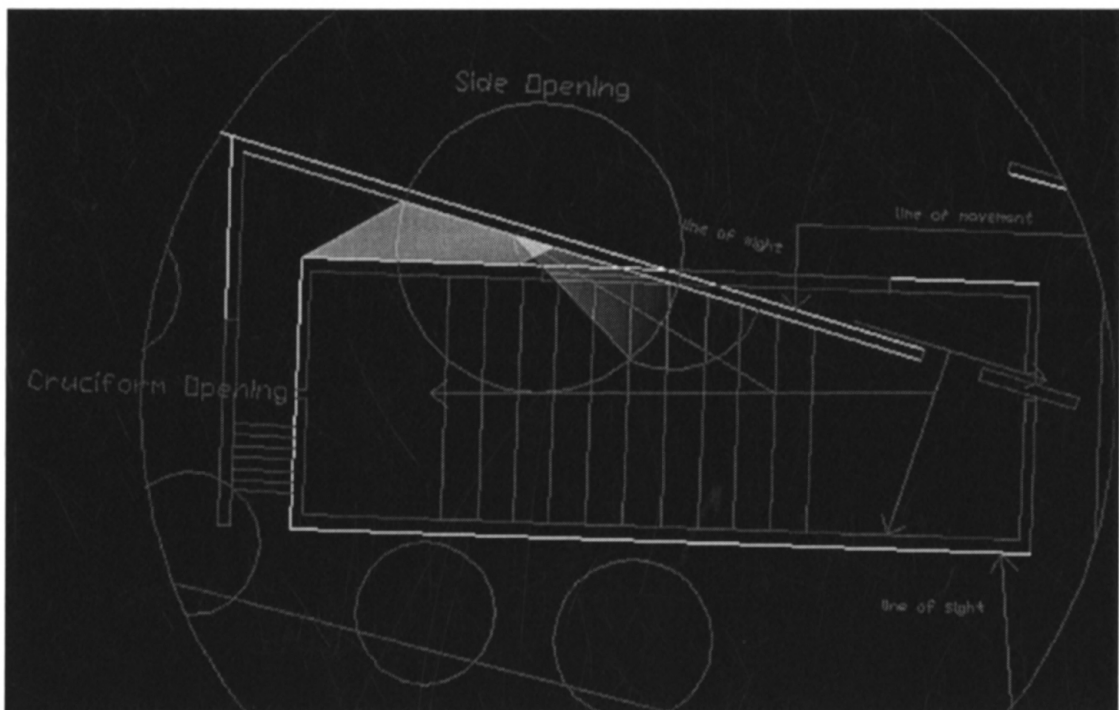
At this point in space, the observer turns right at an angle of 90 degrees to face the altar of the chapel (as the diagram indicates). This is the moment when the observer is confronted with the cross of light, which appears as an embodiment of divine. It is rendered as a fantastic moment, when light and dark are juxtaposed in an extremely dramatic manner. The volume of the enclosure instantly expands when compared to the entrance foyer. Shintai experiences sudden transformation of space, from dim to light and from small to large. Expansion and contraction of volumes, sequential spaces of semi-dark to dark to bright light, invite and compel Shintai to actively participate in the spatial experiences rather than being a passive observer.

Confrontation with the cross of light communicates a pure manifestation of divine in the interior space. Light penetrating from the cruciform opening cuts

through the darkness as if sculpting space within darkness. This similar phenomena is referred by Ando in his observation of the windows in western space,

" ... such windows, almost more than they allowed light to enter, shone with intense brilliance, as if they were the very embodiment of light ... space was carved – like a sculpture in the making – by a line a light that pierced the darkness, its appearance altered with every successive movement." (Ando, 1995, P.470)

Indirect light from the side opening, ceiling and rear opening articulate the two events of light and darkness, and manifest in the space. These openings establish specific points in space, which are rendered in twilight. The circumferential space around the openings delineates a zone of "sunyata", which marks an interval between the phenomena of light and dark in space.



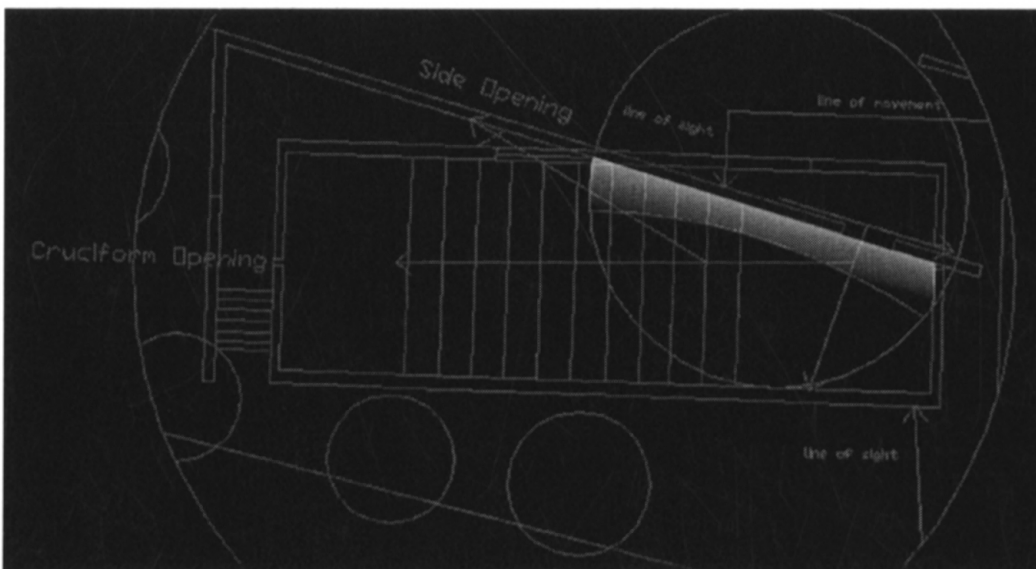
Side opening along the direct line of sight, revealing the triangular zone outside

Nevertheless, space appears to be fissured out through the side opening, which reveals a triangular area enclosed by walls. Tension generated in a single volume through a confrontation of opposing forces of light and dark seems to have released through the point of transition, manifested by twilight along the side opening.

Eyes, guided by the alignment of the wall, are thrown along the direction of the side opening. However, the space is virtually empty, illustrating nothing but play of light on the wall surfaces, which corresponds to the sun movement. Built of gray concrete surfaces, the enclosed space can be linked to the idea of dry gardens (*kare-sansui*) in traditional Japanese spatial compositions. However, within the given context, the enclosure strives to compose *shakkei*, which may be termed as “*shakkei* of negation”. *Shakkei*, which signifies borrowed scenery, indicates inclusion of a far-placed beautiful view into a spatial composition. However, in the situation generated by enclosed space, walls maintain multidimensional objectives. They create a framework, which generates the idea of a human zone in the city, yet offers an interaction with the outside world. They generate an ingeniously calculated screening, which permeates the desired foreign entities in the form of sky and light within the church premises while rejecting any view of the city.

Within this enclosed space, light is reflected off the wall surfaces and at particular moments, light is reflected off the floor, which signifies that light is projected inside along a horizontal axis. However, the space is open above, which maintains a vertical axis, which indicates that the space manifests a dual

composition of vertical and horizontal axes. Through this space, the interior space of the Chapel, which manifests a horizontal dimension of spatial progression, establishes a vertical axis. Being off-center, the vertical axis does not signify the idea of axis mundi, which manifests as the notion of center around which entire spatial composition revolves. The vertical dimension⁵⁶ of the triangular space establishes a virtual extension of mind into nature in the form of light and sky.



Movement within the interior space and dim light diffusing through ceiling gap

Within the discussion of the vertical dimension of light, the ceiling opening may be considered significant since it introduces light from above. However, an important characteristic, which differentiates this vertical penetration of light from the vertical introduction of light in Western churches, is that the light permeating

⁵⁶ Vertical reference is attributed to this space, as it opens upwards, and thus, induces a slice of sky and nature, which is a very essential feature of oriental design. As Tuan argues, for a traditional Oriental home, a vertical axis, rather than the open horizontal space, is the symbol of hope. (Tuan, 1977, P.124)

the space through ceiling opening is introduced along a horizontal plane brushing the ceiling surface. It generates a space of twilight along a vertical axis, which is especially significant, when the entire volume is observed from the entrance, which is at a higher level than the altar. From this point of observation, space seems to expand vertically.

Recapturing the entire process of observing, approaching and finally experiencing the Church, it can be suggested that the composition of perception and experience is identical to the concept of Okumiya, which has been discussed in previous chapter.

The presence of cruciform opening, which is revealed as darkness and enclosed within walls, signifies Oku to be present within the darkness. Similar to the approach to the Okumiya in deep mountains, the observer is directed on a winding path to the inside of the Church, while encountering several events in between. However, when Oku, in the form of the cruciform opening, is revealed to the observer, it scatters away outside and through the cruciform opening, maintaining a horizontal reference to the outside, allowing the observer to be transported back to the place of the origin of the pilgrimage. Although the Cruciform opening is revealed as an end of the pilgrimage, it nevertheless becomes an empty sign.

This concept of spatial organization manifests an architecture of procession, in which drama is sought in experiencing the spaces, rather than visual delight in observation of architecture as a sculptural piece. When approaching the Church, the phenomena of light and shadow are revealed in a

successive fashion through a frontal composition of concrete surfaces. The concrete surfaces dematerialize in the presence of light, transcending their material presence. Through the process of projecting the events of light and shadow on concrete surfaces, the surfaces are rendered identical with the phenomena. The observer is prompted to perceive the dynamic manifestation of events, which signify the notion of transience deeply wedged into Japanese consciousness.

Similarly, within the church interior, the sequence of spaces is continually reinvented by the phenomena of light and darkness. Space is fragmented with calculated highlights of light and dark, which are intellectually recomposed in the minds of the observer. Architecture unfolds into a sequence of events of light and dark, which is articulated by points of "sunyata" manifested as twilight in space. Inoue cites a haiku, which communicates similar idea of ephemeral existence of events,

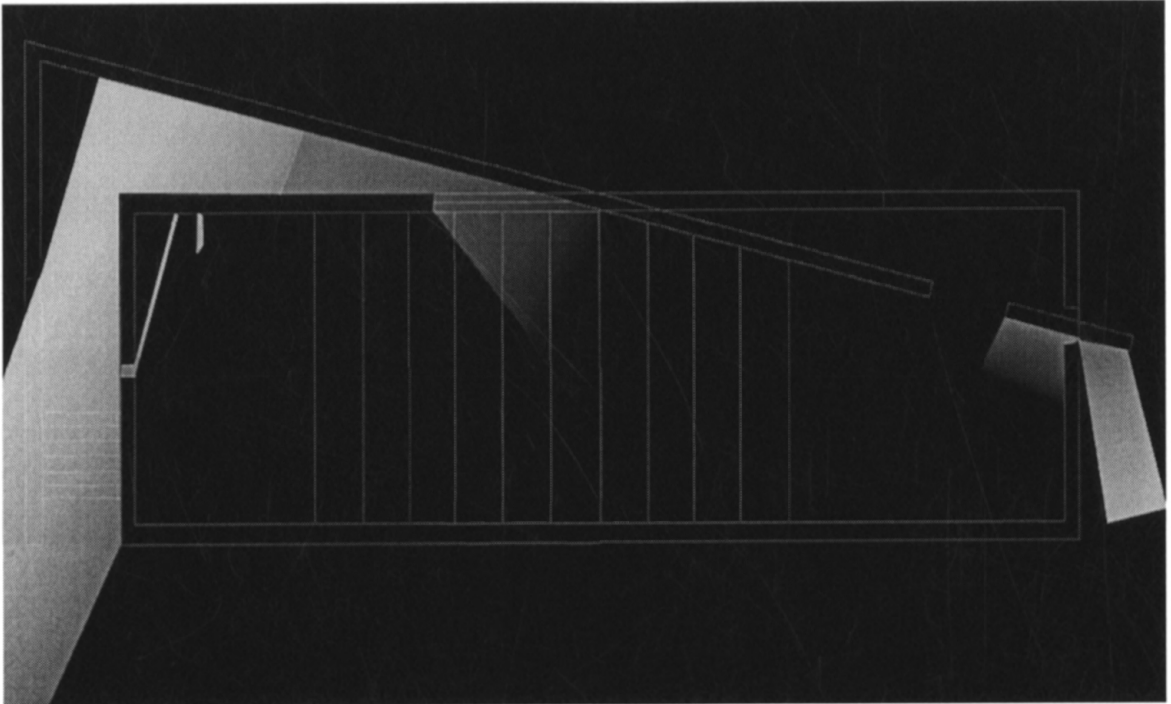
" Faintly in the morning mist on the Bay of Akashi, I saw a boat appear and disappear beyond the islands." (Inoue, 1985, P.171)

His following observation explains the intention behind movement spaces, in which events are momentarily revealed, in a successive order,

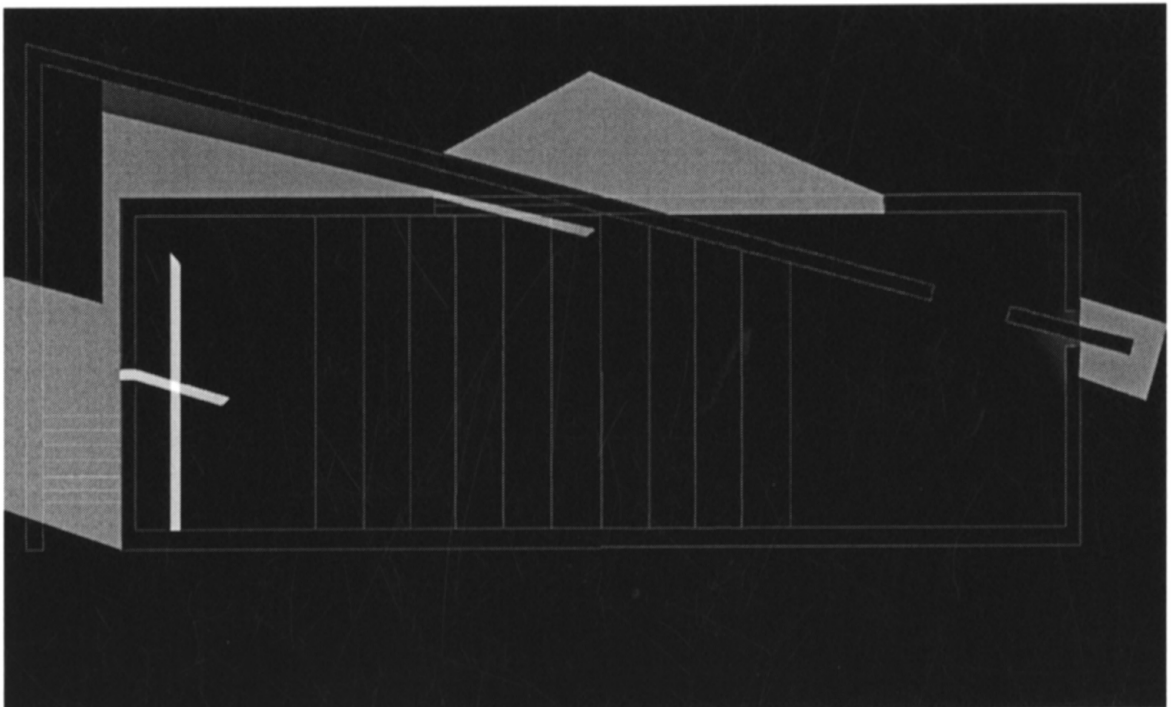
" A sense of mutability or flux attended by diverse deflections characterizes these visions; they describe an unknown world where, except for that small part before our eyes, nothing can be foreseen. There is a consciousness that the present that we inhabit is nothing more than an instant wedged in eternal nothingness." (Inoue, 1985, P.171)

The following sequence of drawings represent a schematic version of illumination level at different points in the Church based on three positions of The sun – summer solstice, winter solstice and equinox.

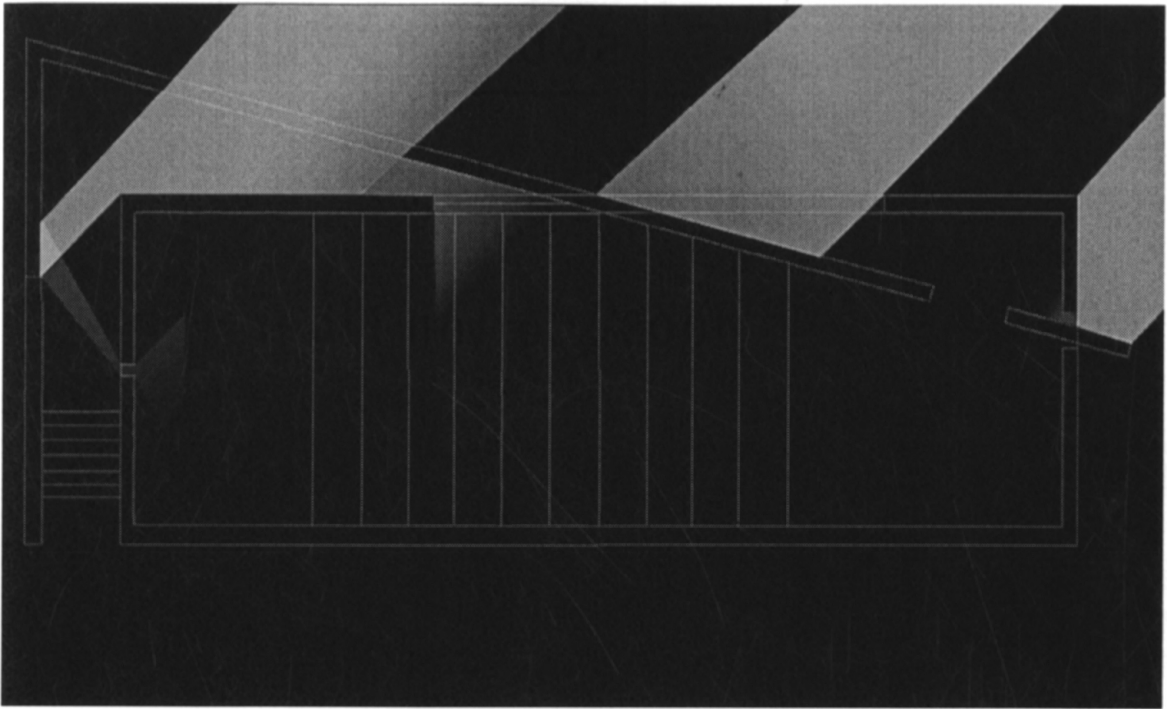
SUMMER – 8 AM



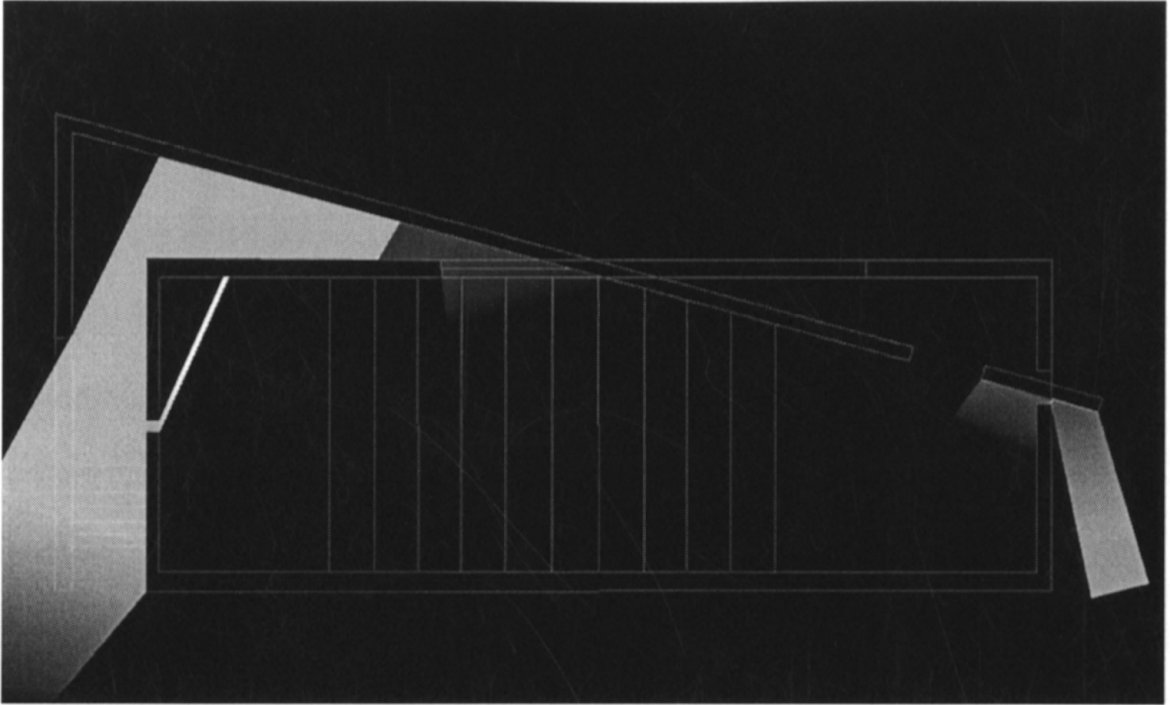
SUMMER – 12 PM



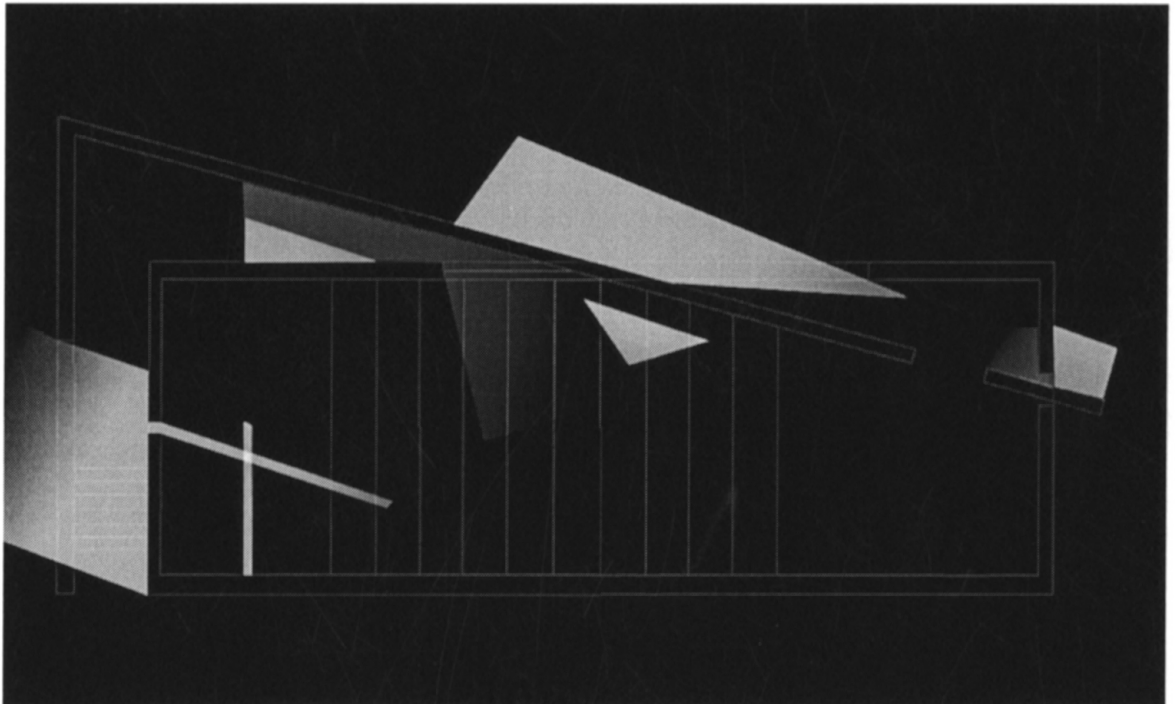
SUMMER – 4 PM



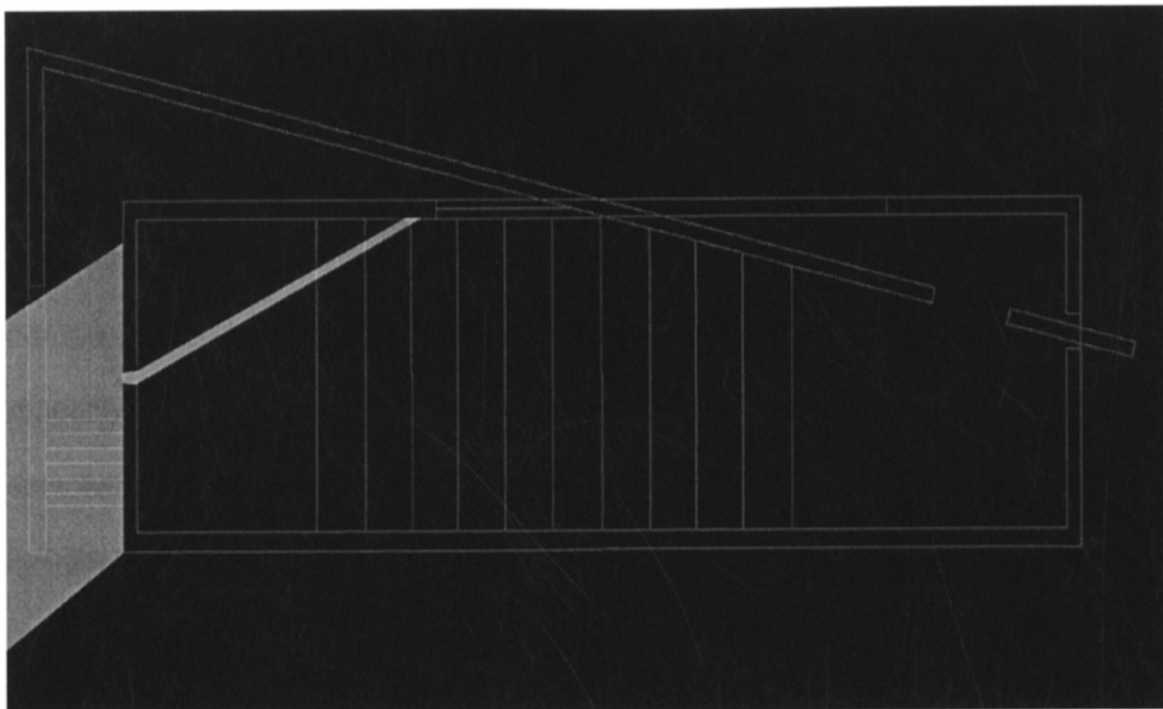
EQUINOX – 8 AM



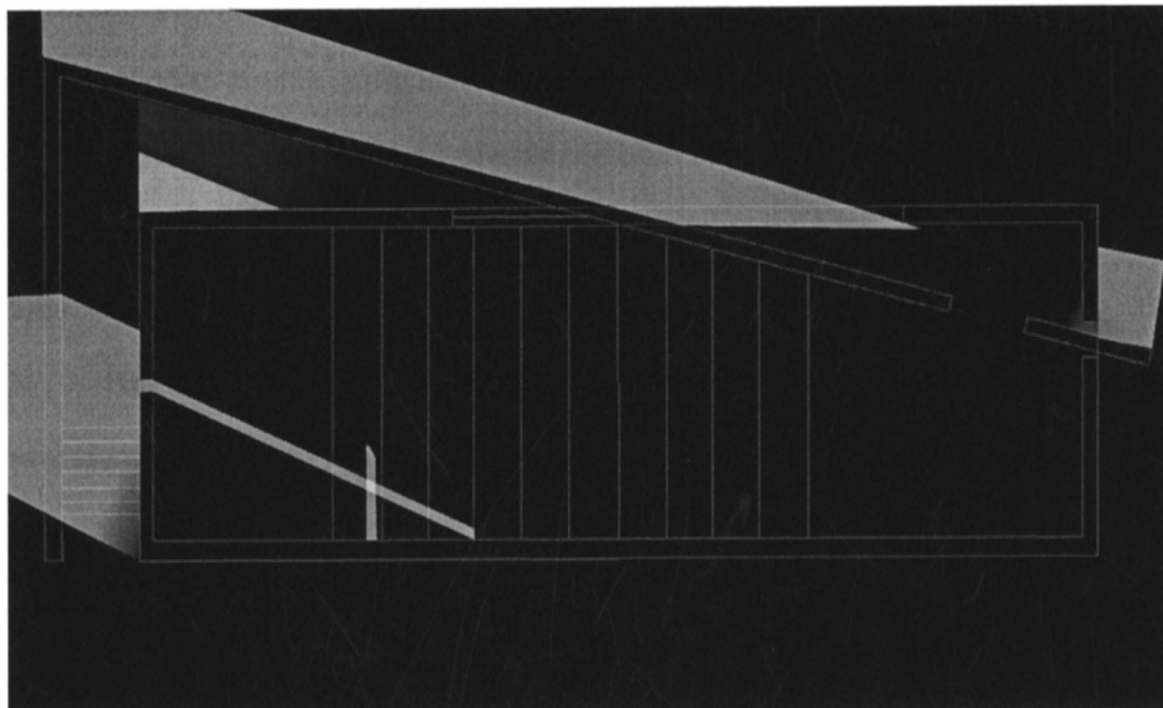
EQUINOX – 12PM



WINTER – 8 AM



WINTER – 12PM



The idea of the unfolding of the Church into successive spaces, transformed by the phenomena of light and dark, is an effort to regenerate the consciousness, which has nurtured Japanese culture since early ages. The momentary appearance of an event and its successive disappearance points to the idea of transience, which informs of the temporariness of the world. The flux of events interconnected by segments of emptiness generates an idea of an absolute emptiness or nothingness from which events are generated and ultimately, dissolved. The momentary revelations of emptiness through the presence of twilight in the Church is indicative of a similar intention to evoke the cultural and spiritual meaning within the observer, who goes through the process of experiencing architecture as a phenomena.

However, it can be concluded from the above discussions and observations that the true dimension of successive observation is that of time. Observation of events is manifested in temporal and not in spatial succession. In line with this idea, successive appearance and disappearance of events observed in a single volume of space with respect to time may be termed as an expression through a time-structured composition.

Having discussed the successive spaces in the church, which are revealed as events of light and dark, next section focuses on the temporal succession of events. In the Church, within a single space, phenomena of light and dark continuously reinvent space, which suggests composition of successive observation of events as a temporal phenomena (space remains constant yet regenerating continuously). The notion of observing space in terms of events of

light and dark transcends material manifestation of architecture and next section focuses on this aspect of Church through which it is manifested as a phenomenalized space. It will analyze the relationship between space and phenomena of light with respect to temporal succession.

SPACE AND TIME

Entrance Foyer

The entrance foyer is located in the northwest corner of the Church and therefore, during the early half of the day, the space is illuminated by indirect light from the west sky. In addition, rear opening receives reflected light from the wall surface, which generates very dim light in the foyer.

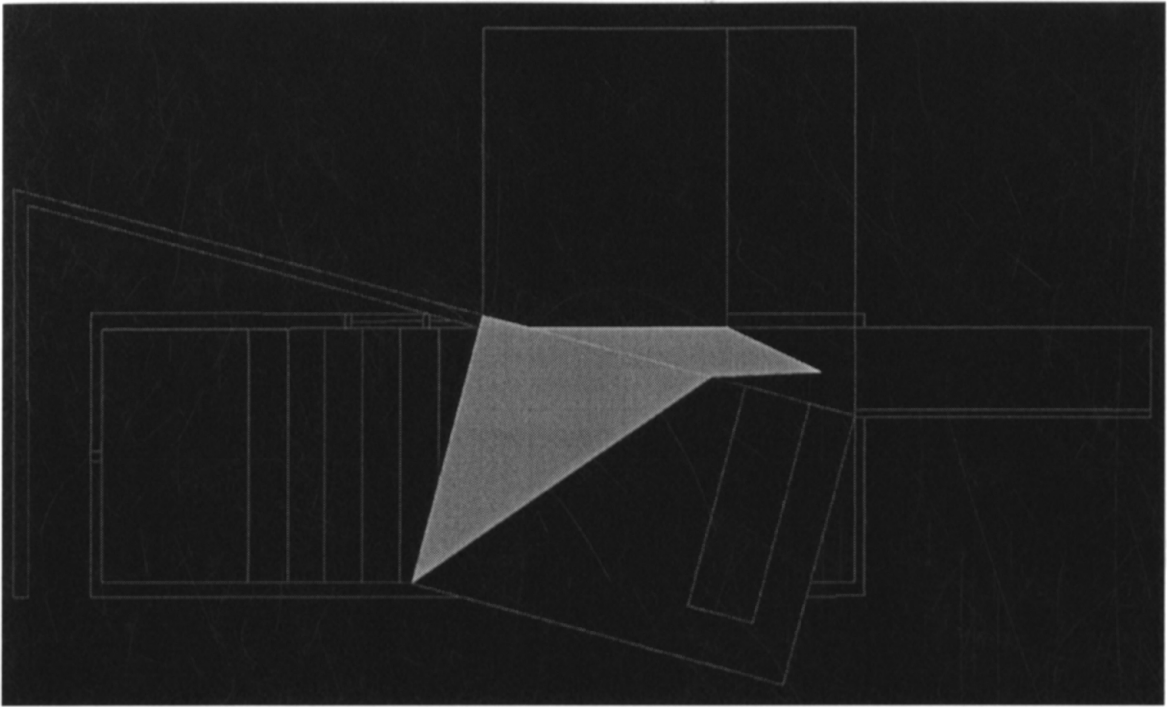
Around noon, when the sun's position aligns with the angle of penetrating wall, the wall and floor in the entrance foyer receive direct the sunlight and the foyer is brightly illuminated. In addition, reflected light from the rear opening permeates the entrance foyer. Dimly illuminated space of the entrance foyer instantly transforms into brightly lit space.

Wall surface, which receives direct light at this time, confronts the visitor in a frontal composition. Placed at a sharp angle of 15 degrees, wall manifests a strong presence, which dictates the movement of the observer along its alignment into the foyer.

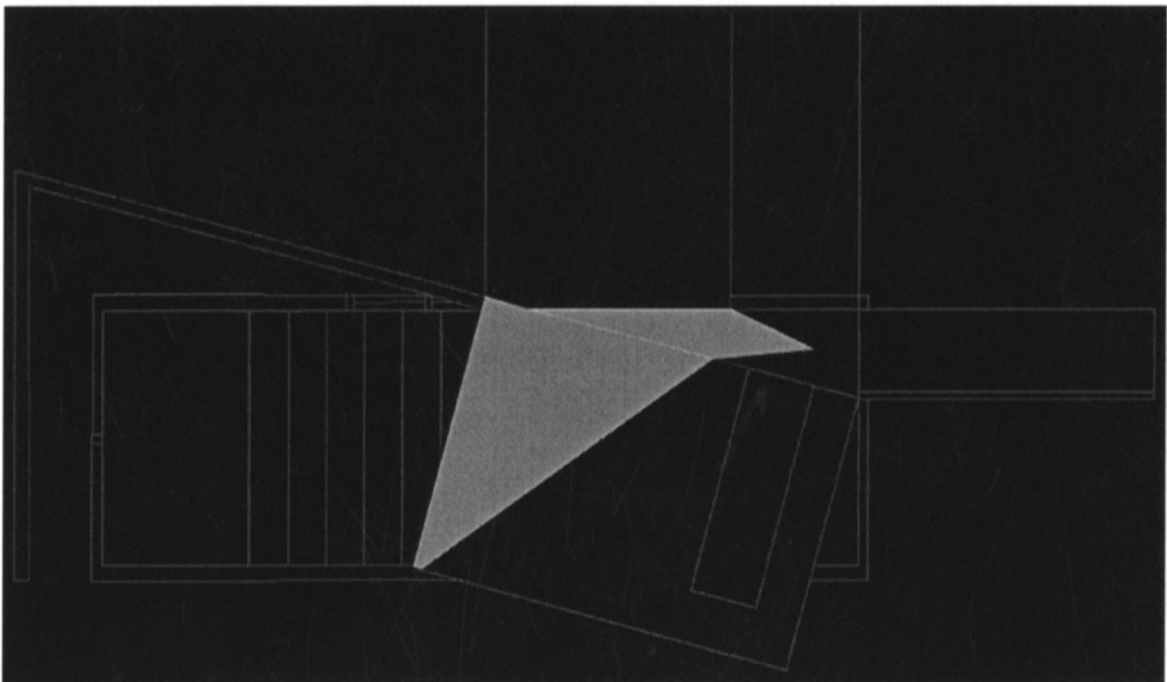
Wall surface, which is rendered dematerialized in presence of light, manifests events by delineating shadows of the mullions on its surface. These deep shadows constantly shift, transform and disappear corresponding to the sun's movement, atmospheric conditions and seasonal influences. Rather than representing the eternal movement of the sun, shadows present a moment in space, which is wedged in the absolute order of emptiness. Wall becomes a projection screen on which events are projected for a brief moment in order to be replaced by successive event.

Following drawings depict successive transformation of the entrance foyer represented through Japanese mode of drawings – Okushiji. Drawings represent movement of light on the wall and floor in the entrance foyer in equinox.

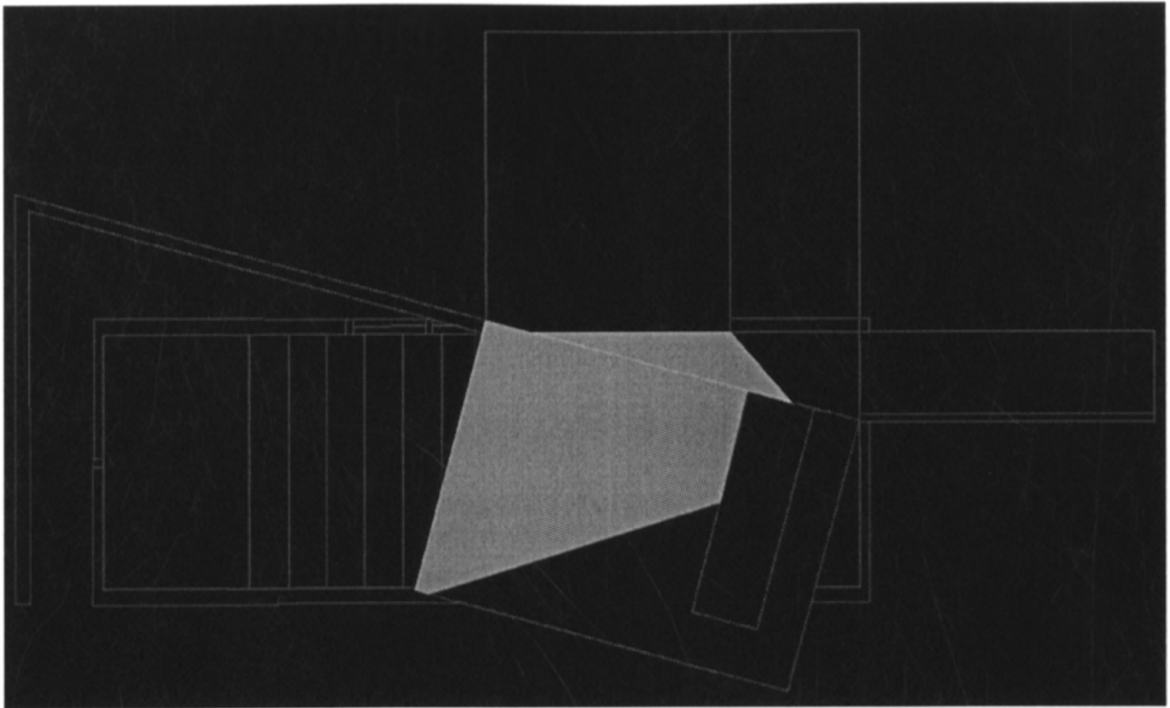
1150 AM



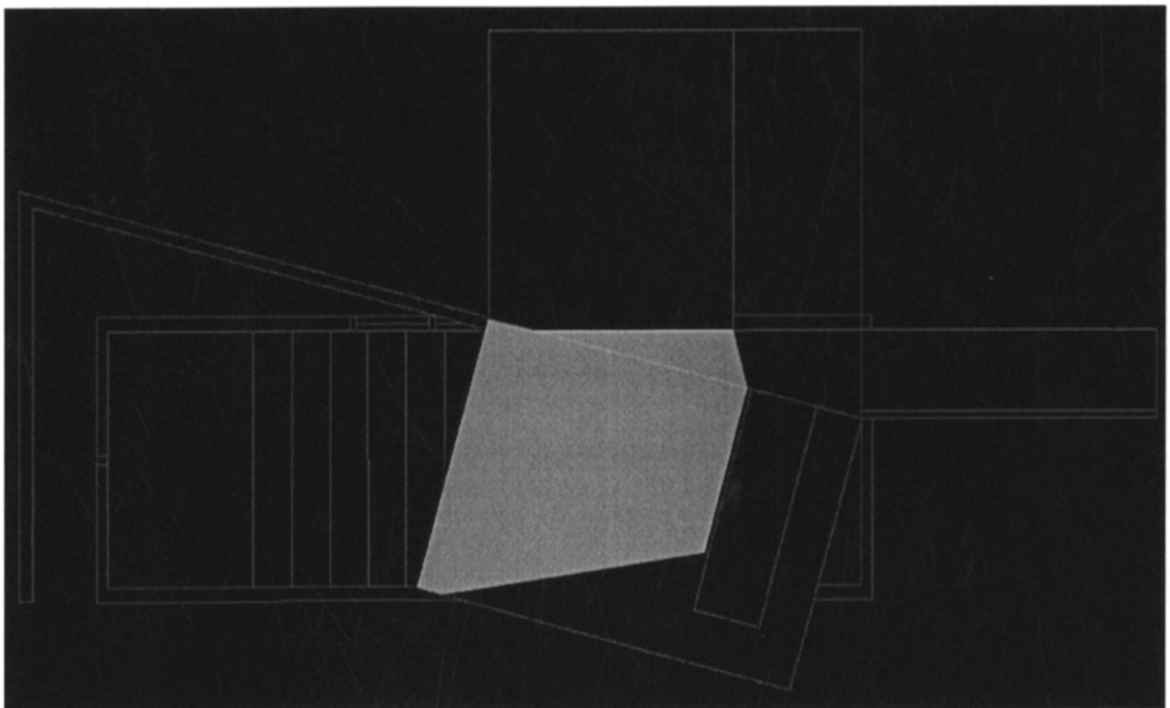
1200 PM



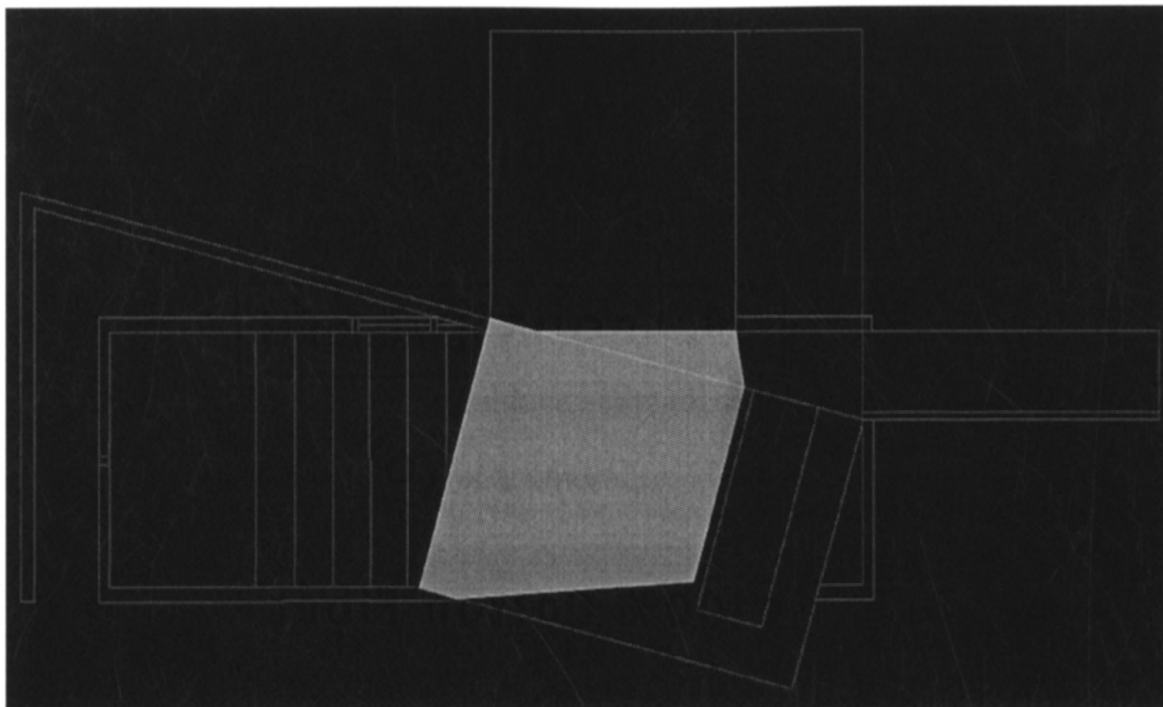
0100 PM



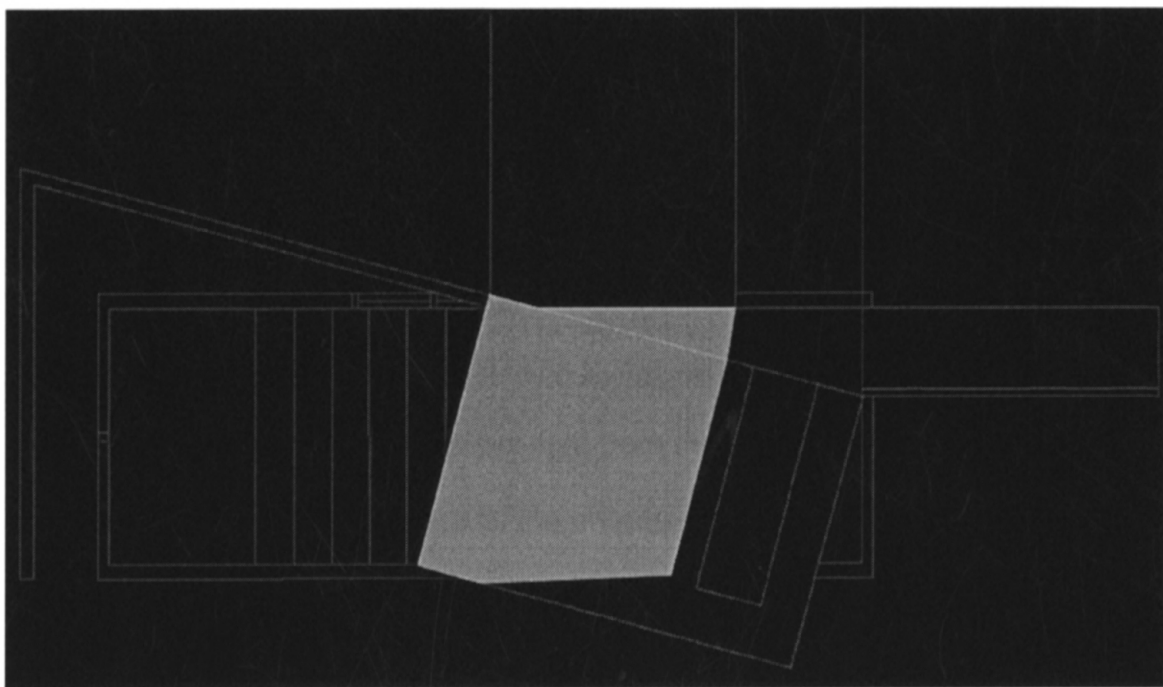
0200 PM



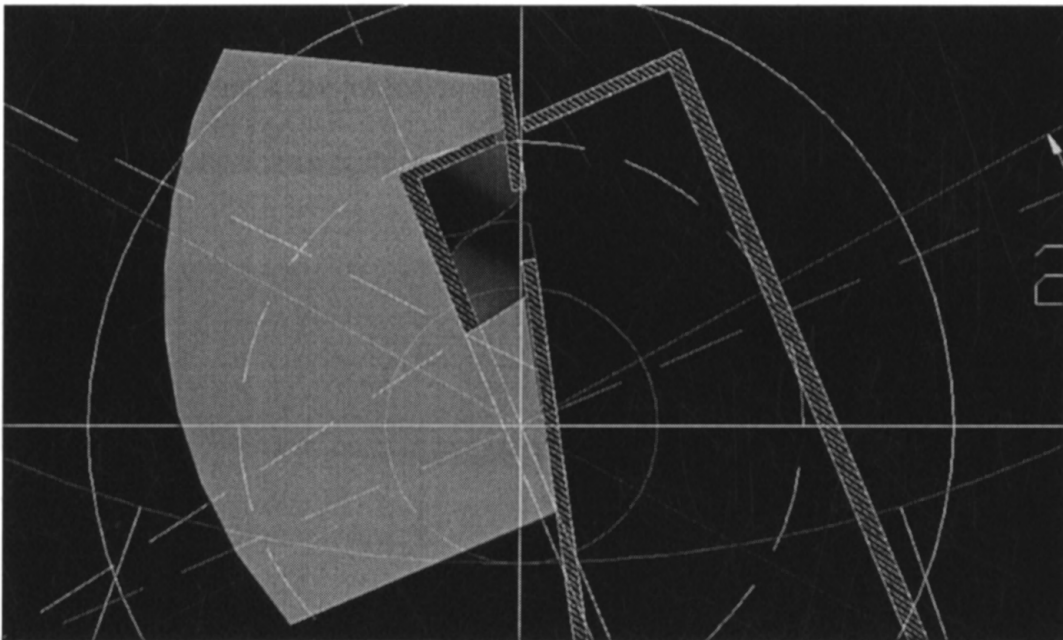
0300 PM



0400 PM



Around noon, when the sun has reached maximum altitude and has aligned on the west of the penetrating wall, floor of the entrance foyer receives direct light, which moves back and forth corresponding to the sun's movement towards west. The sunlight initially penetrates deep into the space and eventually, starts receding, with the sun's movement towards west. At this moment, shadow of the ceiling (of the foyer) begins to replace light on the wall surface. Direct light on the wall surface starts receding, indicating the end of one event and gradual appearance of another.



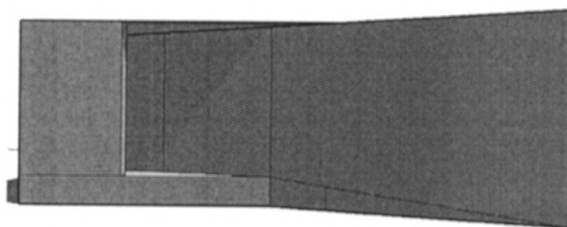
Entrance foyer permeated by twilight in the evening

In the evening, the sun's position in the west is not aligned to the entrance foyer, which permeates only indirect light from the west sky into the entrance foyer. Brightly illuminated space of the entrance foyer is replaced by soft indirect light. In addition to the light permeating from the entrance opening, rear opening redirects the sunlight into the entrance foyer. Wall projecting beyond the opening in the west receives the sunlight from the west and redirects this light into the

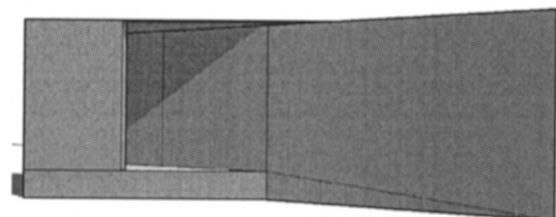
entrance foyer through the rear opening, however light is not introduced before a certain degree of refinement by the concrete surface of the wall.

At this moment, foyer is painted in a state of twilight, which manifests as a moment of articulation between two successive events of light (of the day) and dark (of the night).

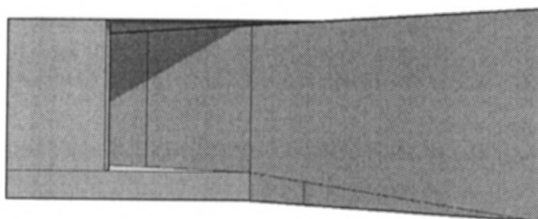
Entrance foyer manifests a space, which is constantly renewed by light and manifests momentary revelations of emptiness, which exist as gap between events of light and dark. Architecture is transcended of its material significance and the whole process of geometry, orientation and materials are structured together to achieve the intention of generating meanings, which is deeply ingrained in Japanese culture.



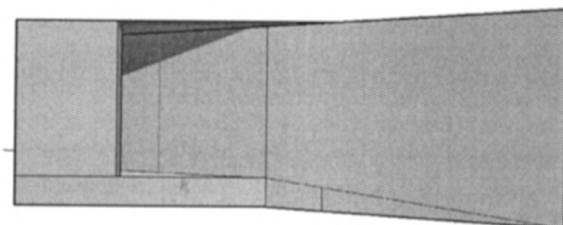
1200 pm



1230 pm



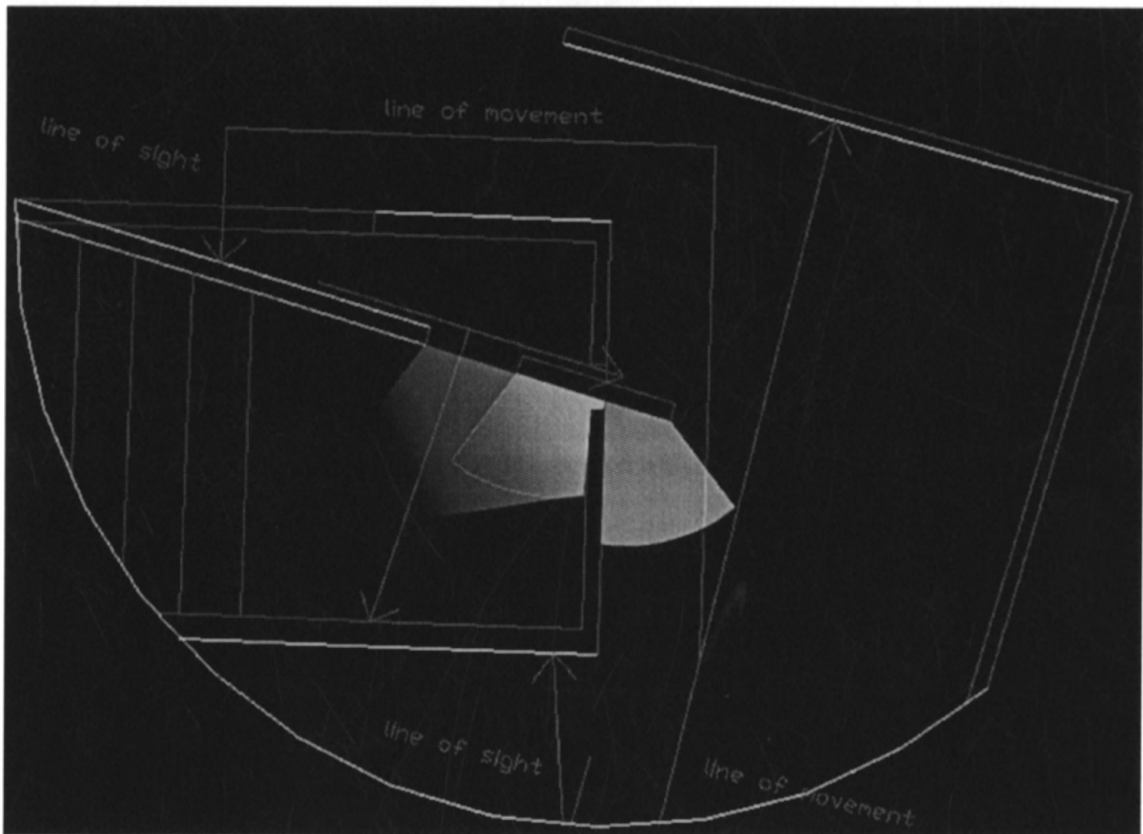
0100 pm



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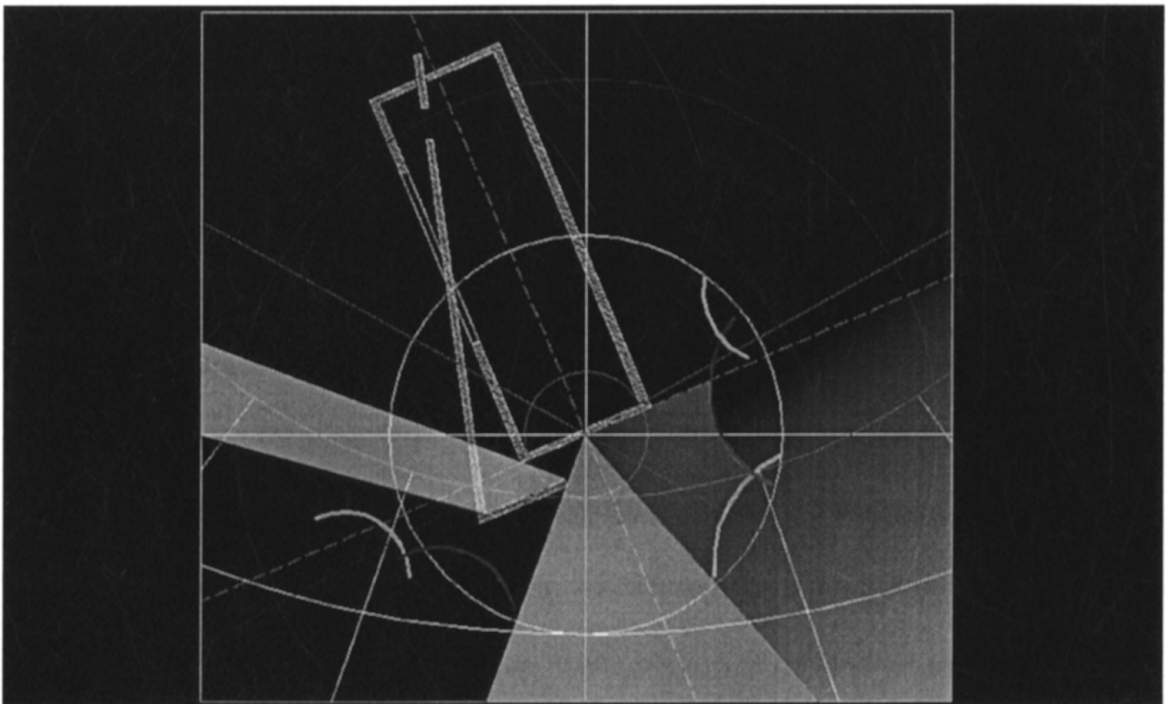
Sequence of diagram illustrate transformation of entrance wall during Equinox

The space of transition from entrance foyer to the sacred interior of the church is demarcated by the presence of perpetual twilight. This point in space is constantly illuminated by indirect light permeated through rear opening. The wall, which divides the rear opening into two, is aligned to the sun's trajectory throughout the day. The two surfaces of the wall, one facing east and the other facing west, receive the sunlight almost throughout the day. This light is reflected inside the Church interior through the rear opening. Since, the light, which is permeated into the rear space of the church is reflected by concrete surface, indicates that light undergoes a process of refining in color and intensity. This process signifies a perpetual presence of twilight image in the space demarcated as point of transition from foyer to the inner sanctuary.



Transition from entrance foyer to inner space of the Chapel is delineated by perpetual twilight

On the contrary, the inner space of the church presents interplay of extreme light and dark. Blade of light penetrating through the cruciform opening cuts through the space, which is permeated by darkness. However, these forces of light and dark do not manifest an absolute presence; rather they are depicted as events, which have a momentary presence wedged in absolute emptiness. Notion of “sunyata”, manifested through presence of twilight at certain moments in time, seems to articulate the appearance of light and dark.



Light penetrating into cruciform opening is rendered with different color and intensities at different times of the day

Cruciform opening, which represents an embodiment of light, signifies a phenomenon of light and darkness with respect to time. We have already discussed in the first section about the metamorphosis of the cruciform opening from brightly glowing to dimly illuminated cross of light. Cross of light transcends

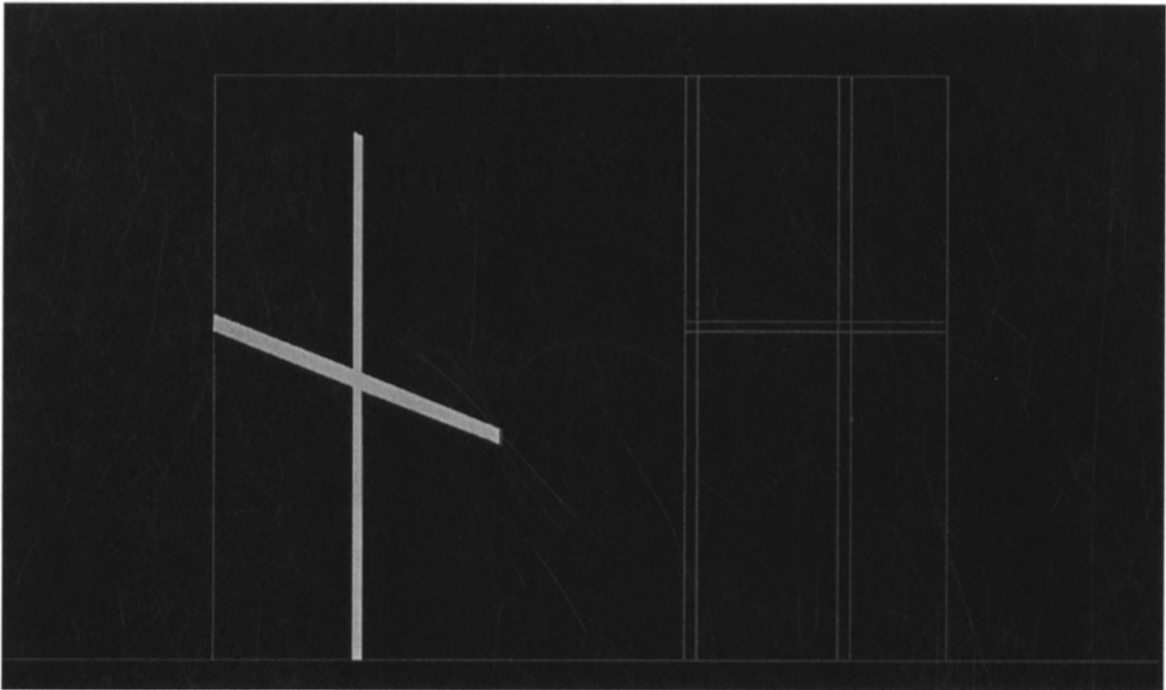
any objectification, and insists to be perceived as an event in becoming. This phenomena of transformation is presented to the observer through a frontal composition, which eliminates the idea of absolute presence of light; rather it communicates notion of transience. The constant transformation of the cross of light renews the surrounding space; it transpires as the idea of space coming into being. However, the manifestation of space never gets mature. It becomes a cyclic process through which events appear and disappear, which gives identity to space. In addition to the continuous regeneration of the cross of light, light, which penetrates through the cruciform opening generates yet another event in the space.

Throughout the day, light penetrating through the cruciform opening is intercepted by the surrounding wall and floor surfaces of the Church. The image does not endorse any material entity of cross; rather it signifies emptiness, which comes into being through "sunyata". Image emerges as an ephemeral presence, which undergoes process of regeneration continuously. Following the sun's trajectory, the image of the cross shifts, transforms, and ultimately vanishes into twilight. However, through a rigorous manipulation of geometry and orientation, source of the light is not revealed to the observer, which establishes the fragment of light in the space having no origin outside the space. The image does not intend to signify extension of the sun; rather it is reflected as a fragmented event of light, which emerges out of emptiness of the space (identified by twilight). Born out of emptiness, the fragment of light manifests a temporary existence,

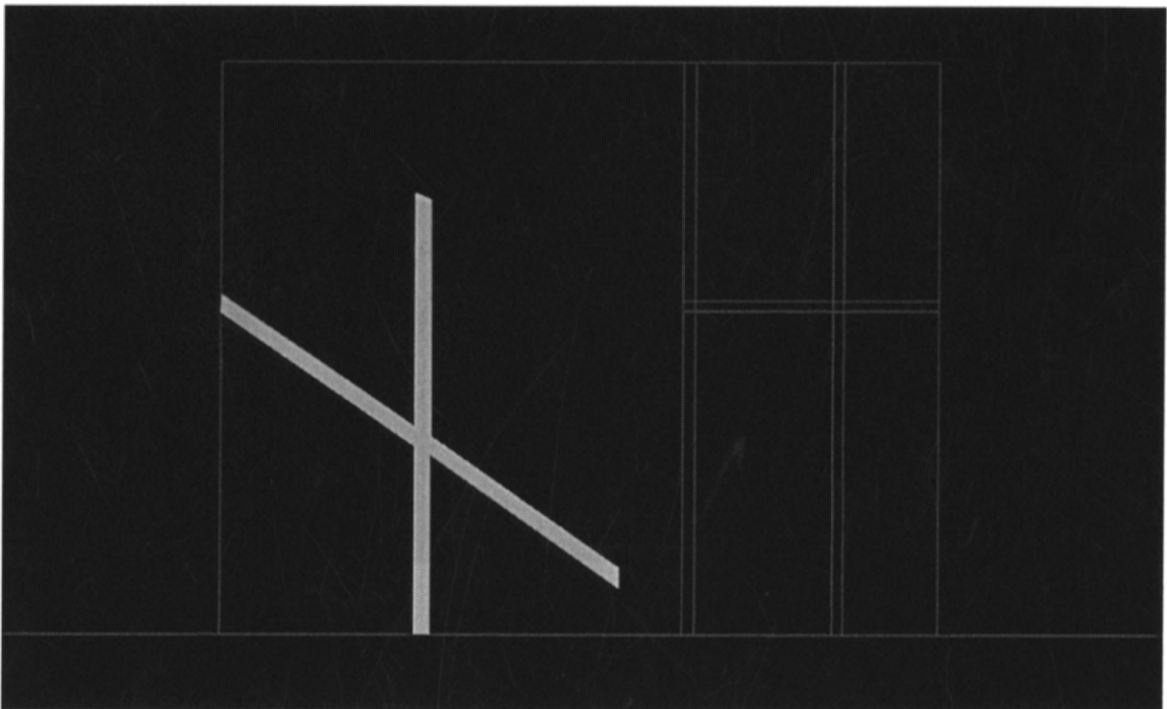
however intercepted by the interior surfaces, within its moment of existence, it gives existence to the space. This process of generating space as a phenomenal event is referred by Ando in the following observation,

" Wall, floor and ceiling each intercept the light, and their existence is revealed, as they simultaneously bounce back and forth among them reflected light, initiating complex interrelationships. Space is born." (Ando, 1995, P.471)

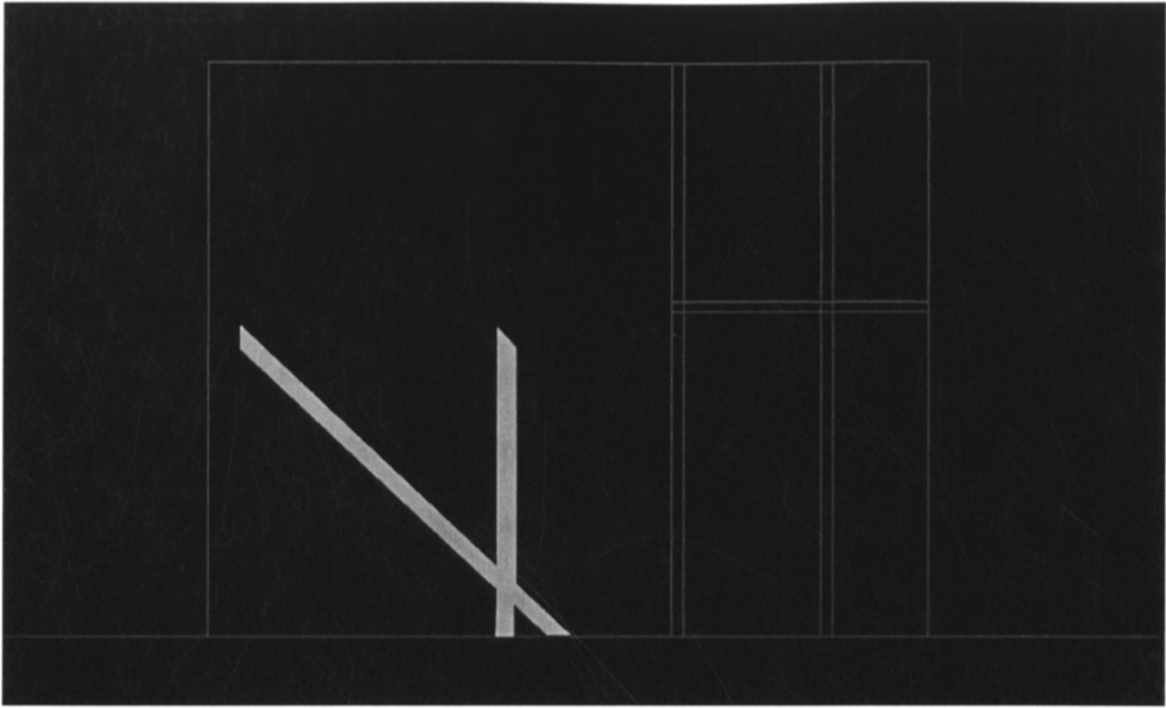
Below is a sequence of drawings depicting phenomenalization of wall surface through ever-changing image of cross across wall surface on equinox.



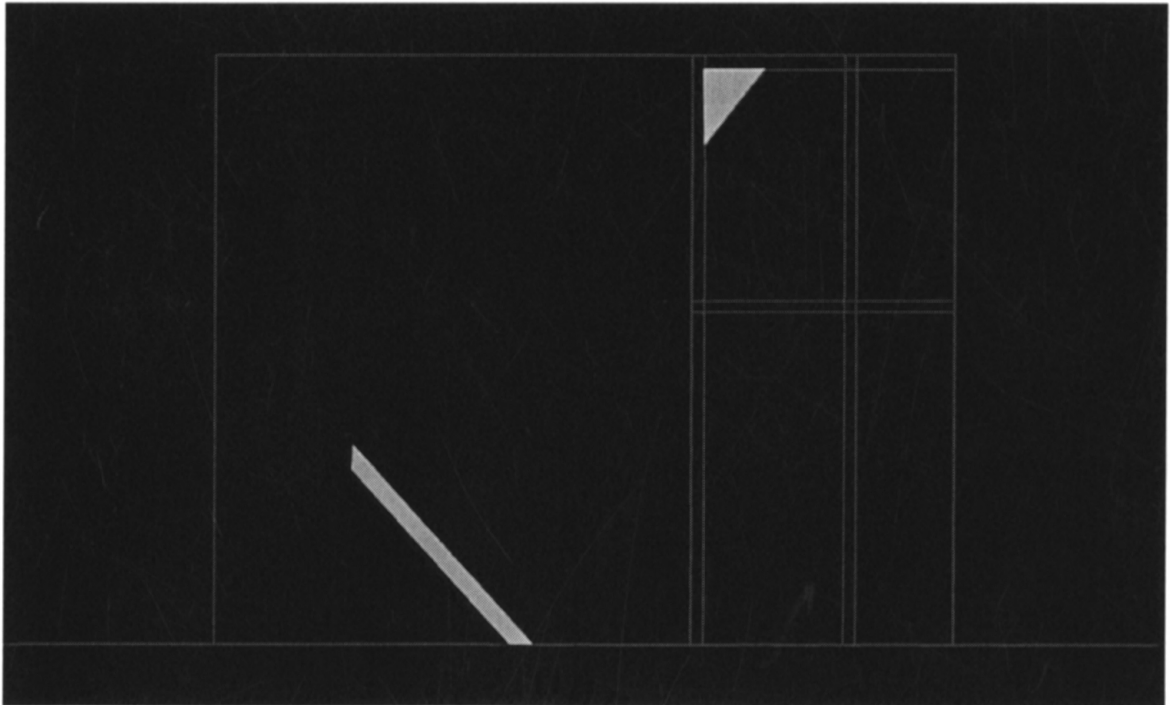
0700 AM



0800 AM



0900 AM



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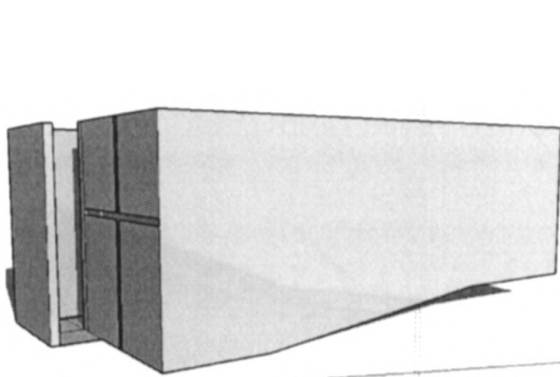
Side opening, through which indirect light is permeated into space, also evolves through phenomena of light. Triangular space enclosed by walls along the side opening is impregnated by events through which space is coming into being every moment. The surrounding walls of the triangular space intercept the sunlight, which shifts the angles and moves on the wall surface, continuously regenerating the surfaces. Corresponding to the transformation of intercepted light on the wall surfaces, light, which is reflected into the space through the side opening changes in intensity and vigor. Constant variations in light render the space under a process of transformation. The intensity of the light reflects the extent to which it has been subjected to refinement and the alignment of the opening to the sun's position.

The process of permeation of light through the side opening has already been discussed in the first section with respect to the sun's position at different times of a day. The metamorphosis of space as an event of light and dark is briefly recollected for the purpose of integrating this subject here.

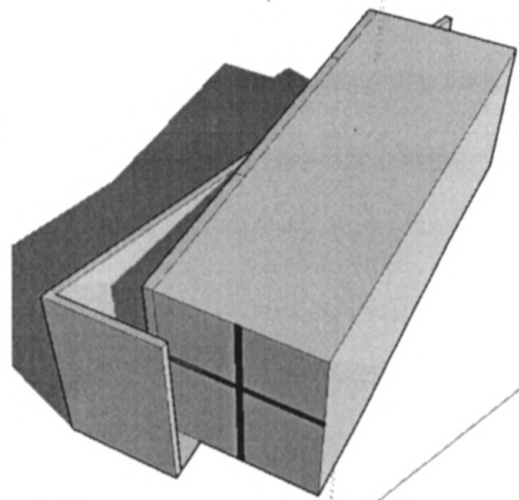
In the morning, light, which traverses through the conduit of walls, is feeble and fragile and generates a soft presence of twilight along the side opening. However, around noon, when the sun is aligned with the angled wall, the walls become the source of light and the perception of intensity of twilight increases gradually. This intensity is again rendered feeble with approaching evening, when the sun is in the west and light is continuously reflected and re-reflected before permeating into space. This process informs of the spatial

delineation along side opening constantly remains rendered in twilight; yet, it does varies in intensity throughout the day.

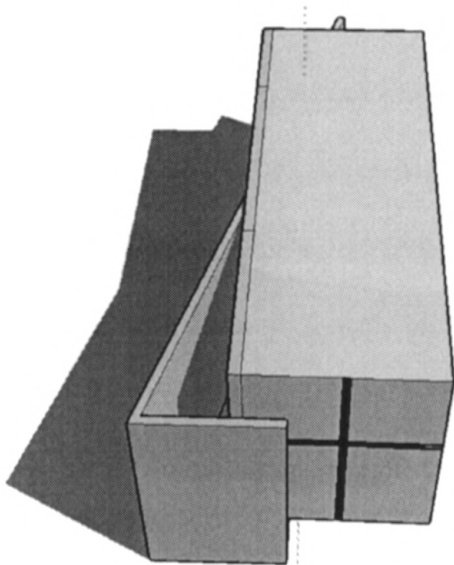
These 3-d drawings illustrate movement of light on the wall surfaces across the side opening in a sequential order.



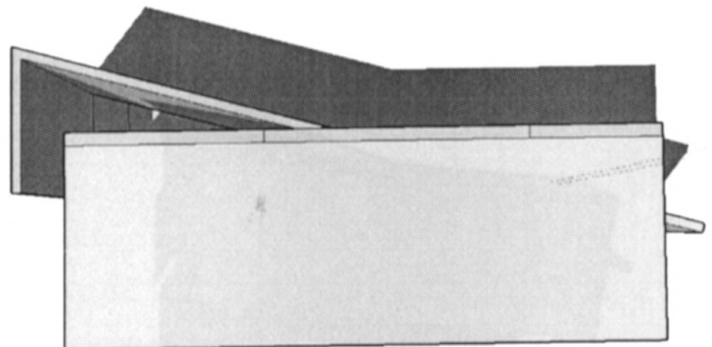
0700 AM



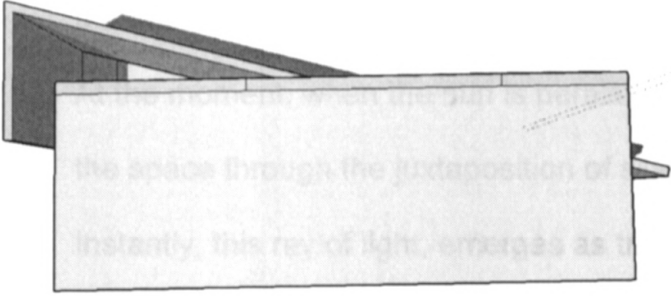
0800 AM



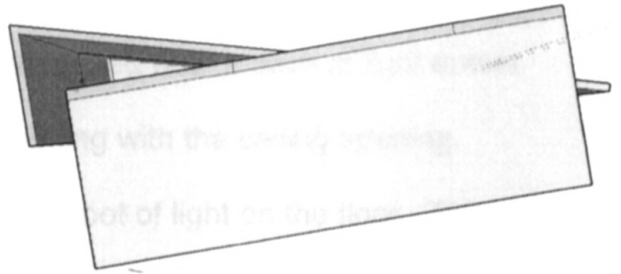
0900 AM



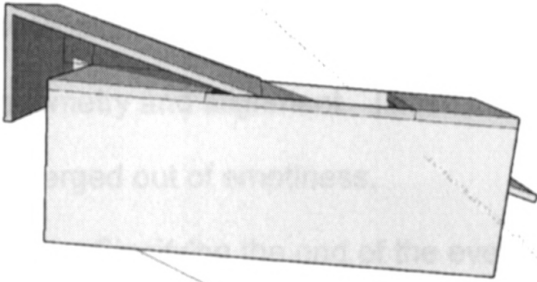
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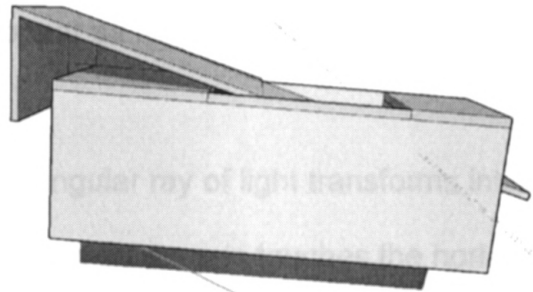
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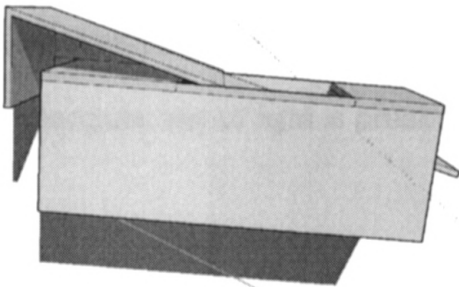
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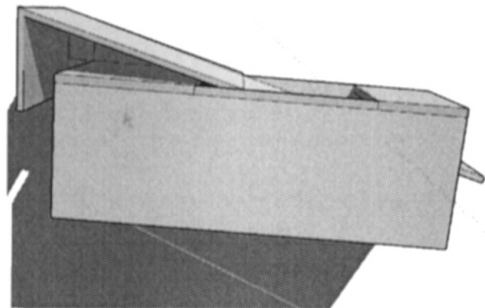
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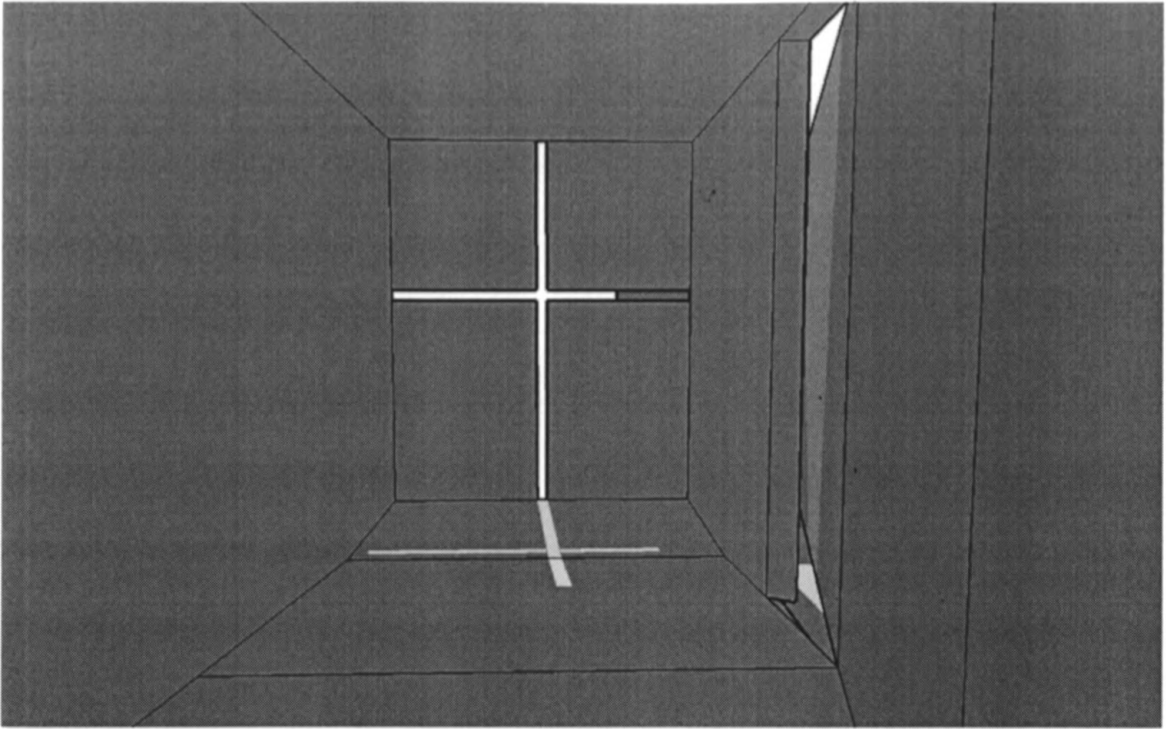


0400 PM

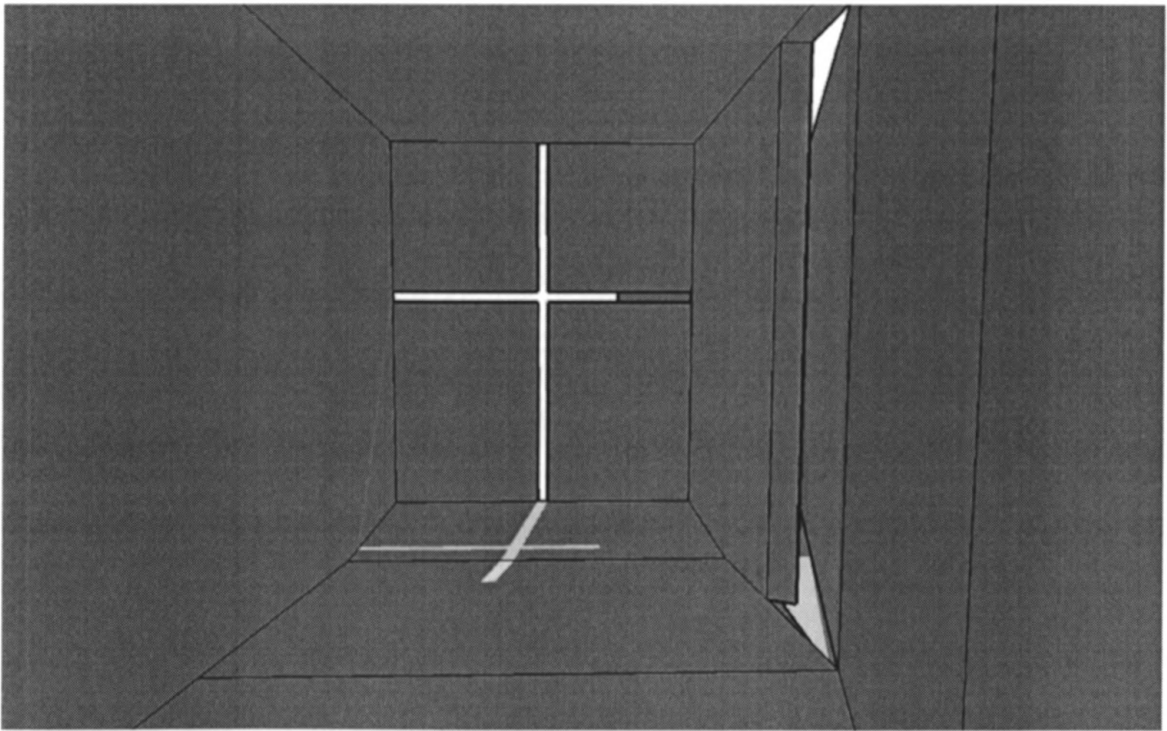
Another event, which seems to appear out of the twilight of the space is a triangular ray of light, which disturbs the serenity established by twilight within. At the moment, when the sun is parallel to the angled wall, a flash of light enters the space through the juxtaposition of side opening with the ceiling opening. Instantly, this ray of light, emerges as triangular spot of light on the floor. This image moves across the interior surfaces corresponding to the sun's movement. This image including the image of the cross within the church interior generate maze of the sun-dials in the space, which do not really emphasize the eternal order of the sun movement. Both these images, however, do not appear as an extension of the sun, since the source is hidden through syntax of rigorous geometry and alignment. These images appear as fragmented piece of events emerged out of emptiness.

Signifying the end of the event, this triangular ray of light transforms into a brilliant flash of light on the wall surface, as soon as the sun touches the horizon. This horizontal plane of light hovers over the ceiling. This event exists for a brief moment, followed by another event of darkness.

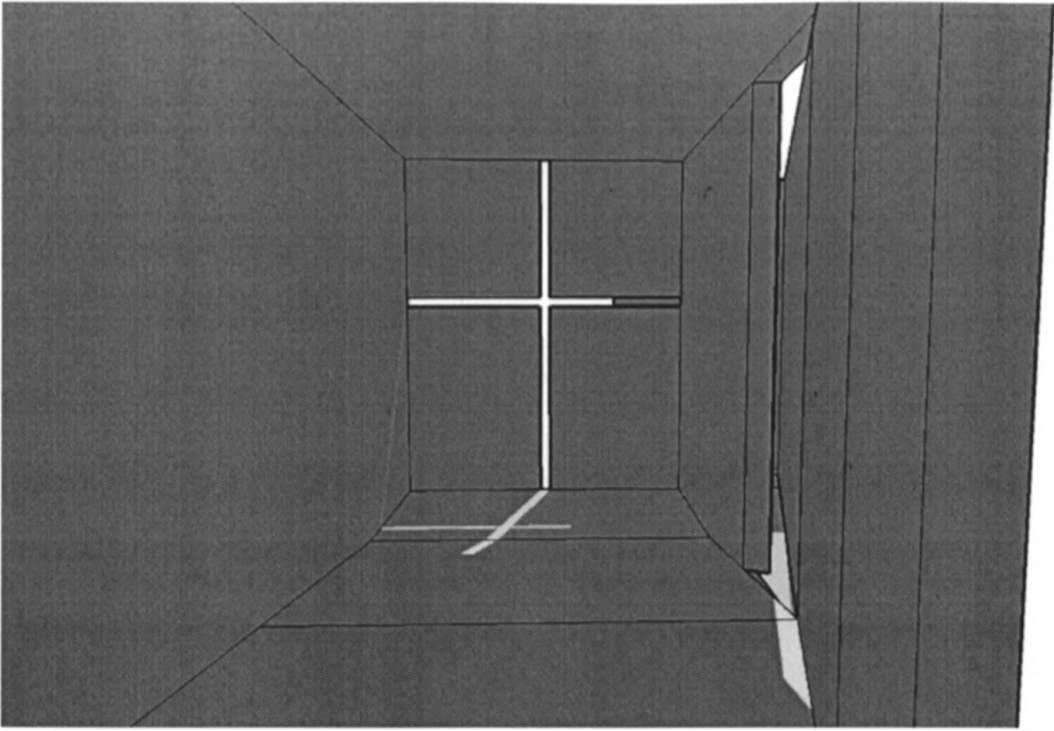
In the following pages, a sequence of drawings depicting the transformation of the inner space on equinox through images of cross of light and triangular ray of light is presented.



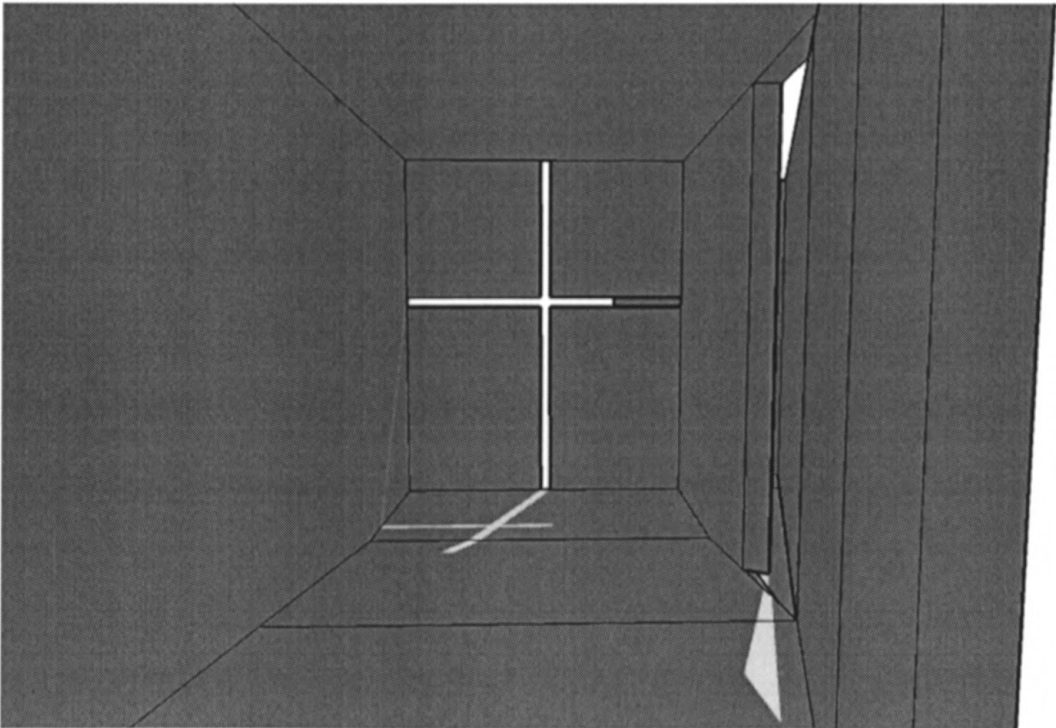
EQUINOX 1100 AM



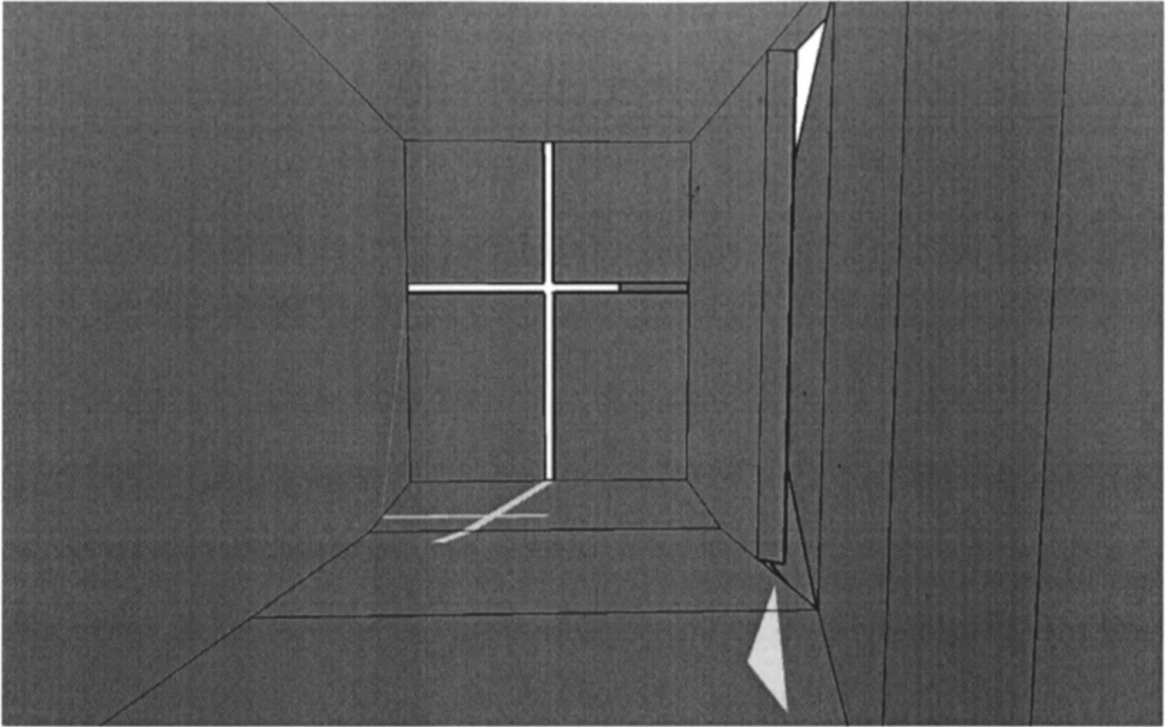
EQUINOX 1130 AM



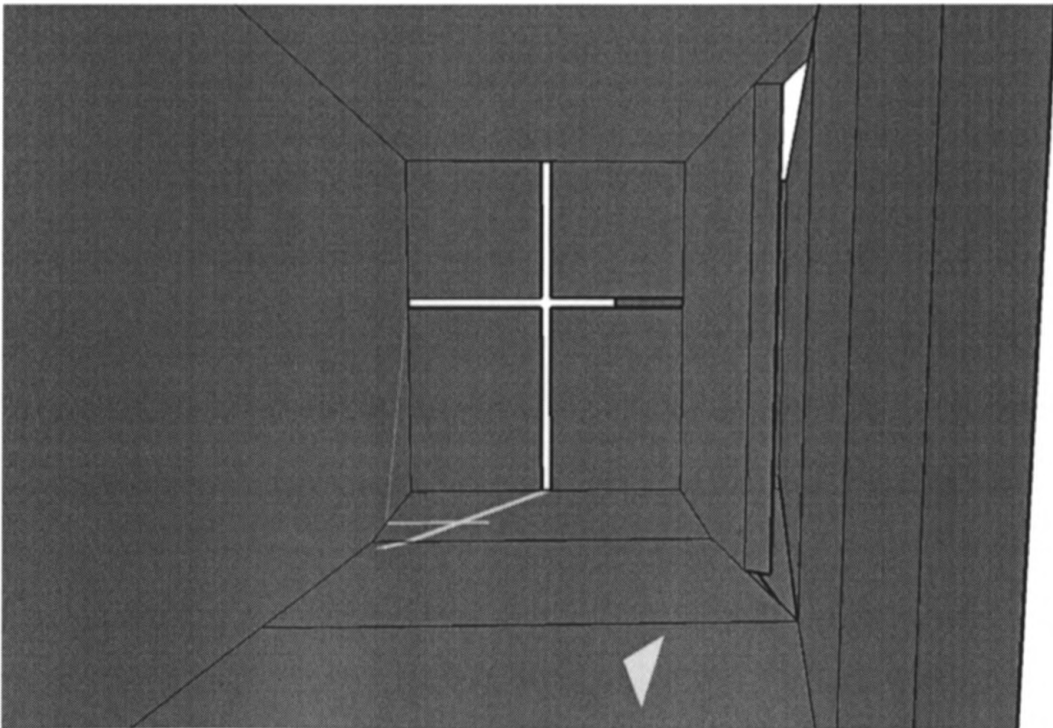
1145 AM



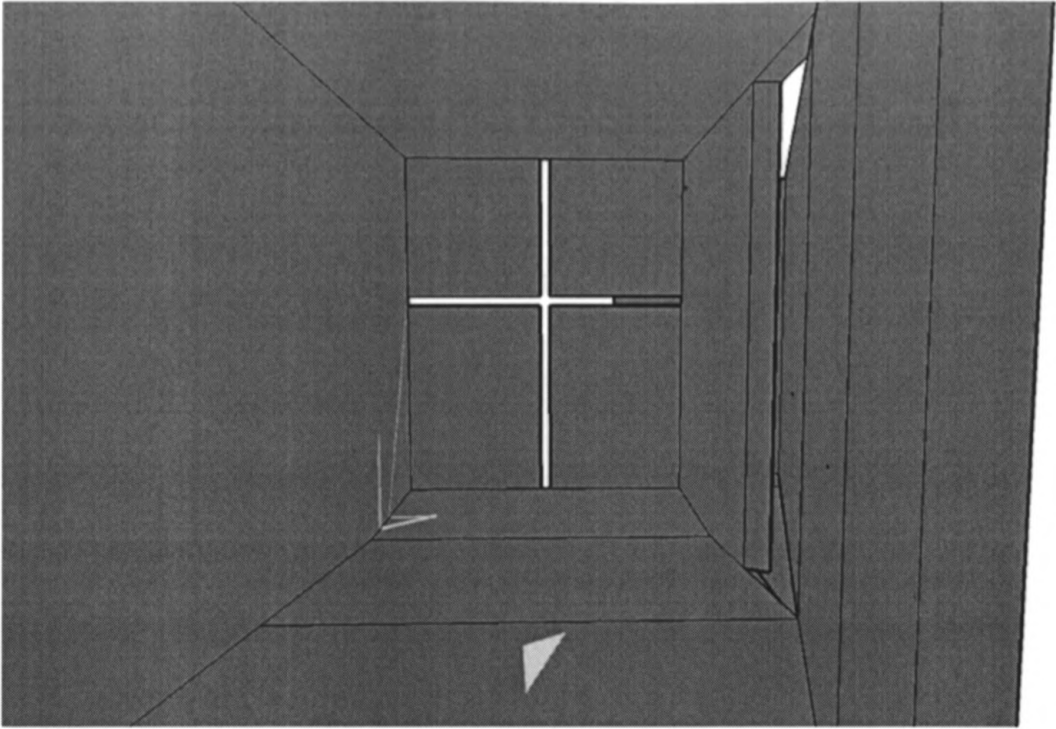
1150 AM



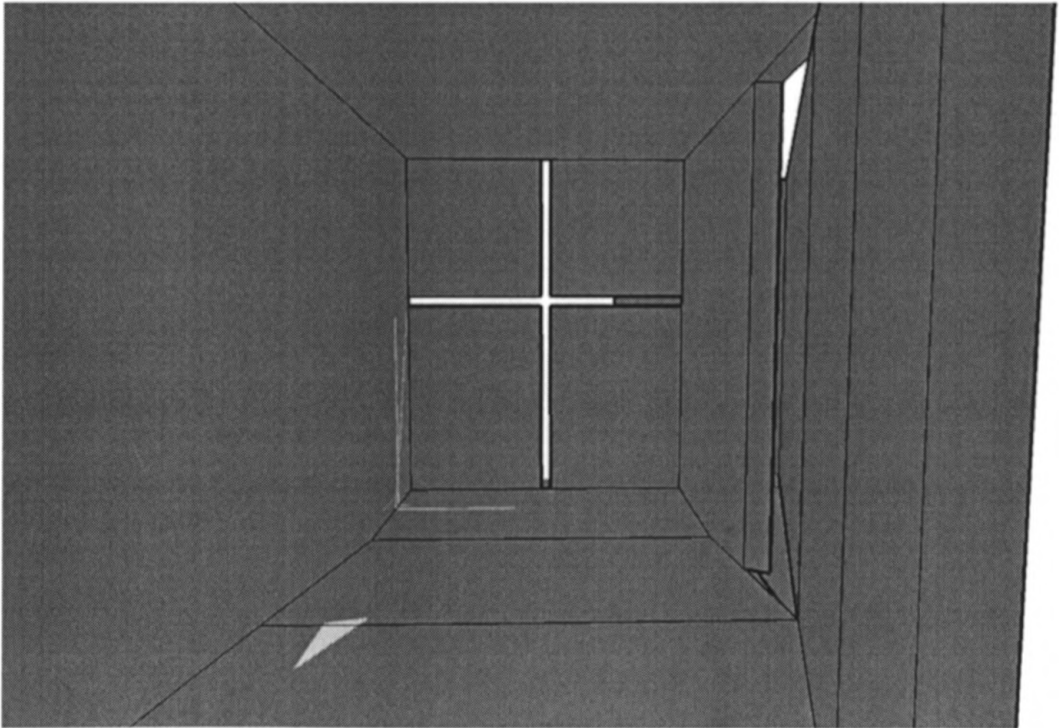
1200 PM



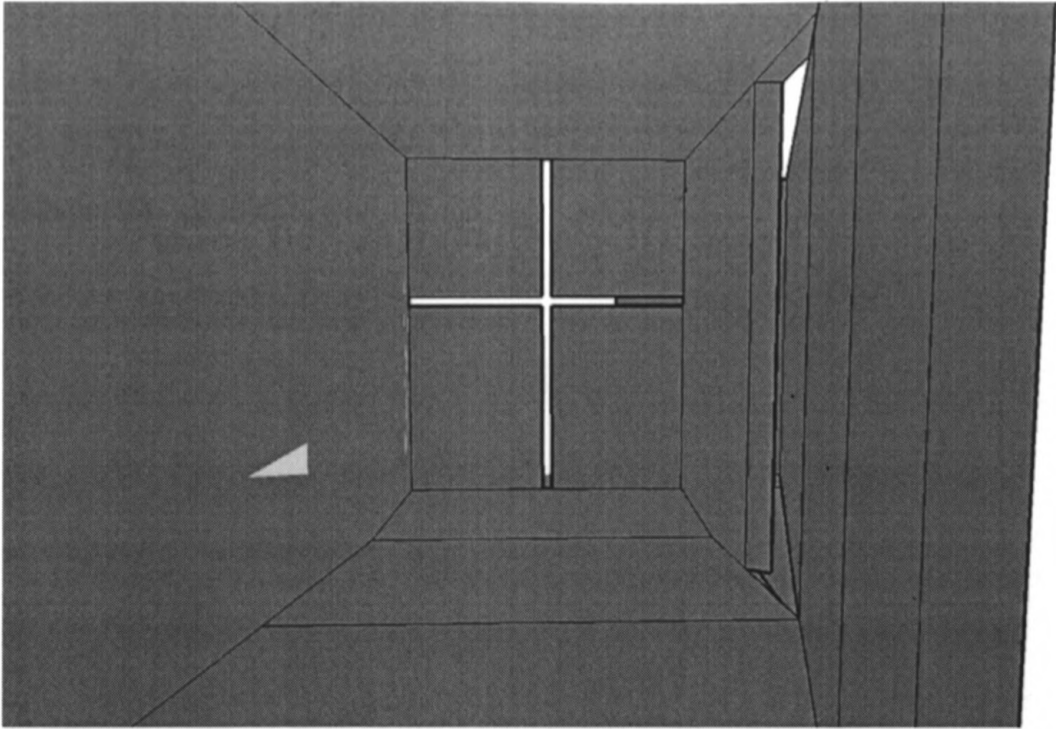
1230 PM



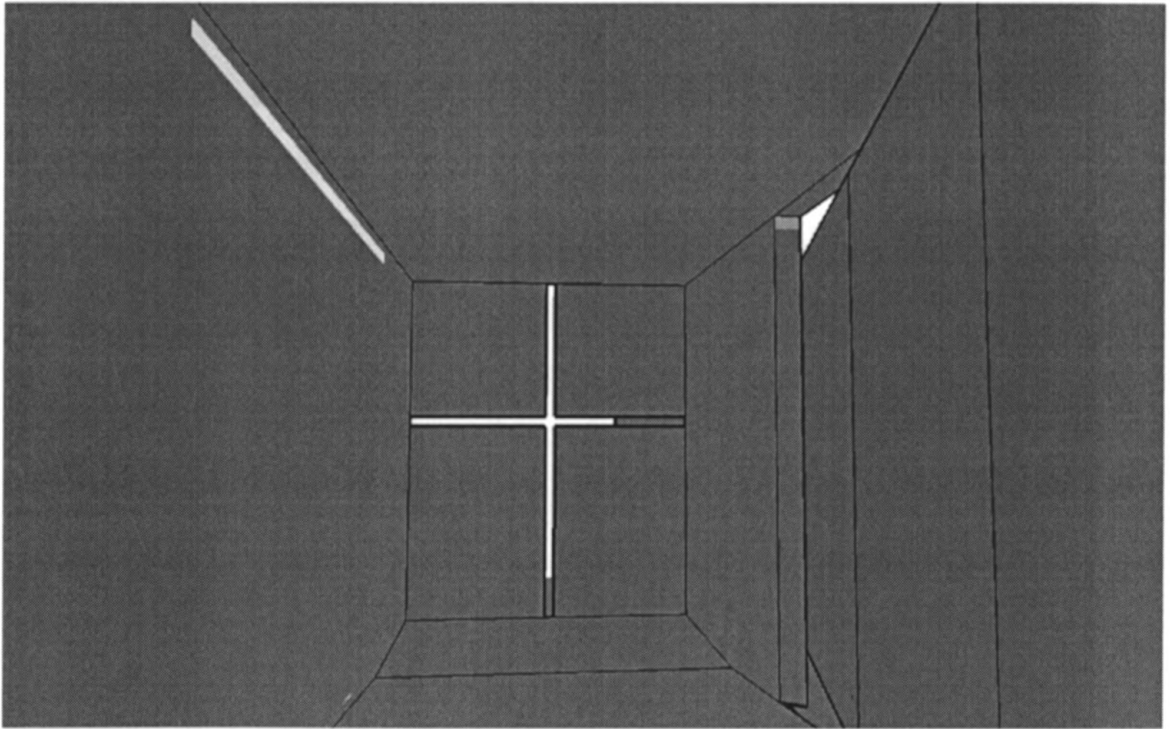
0100 PM



0200 PM



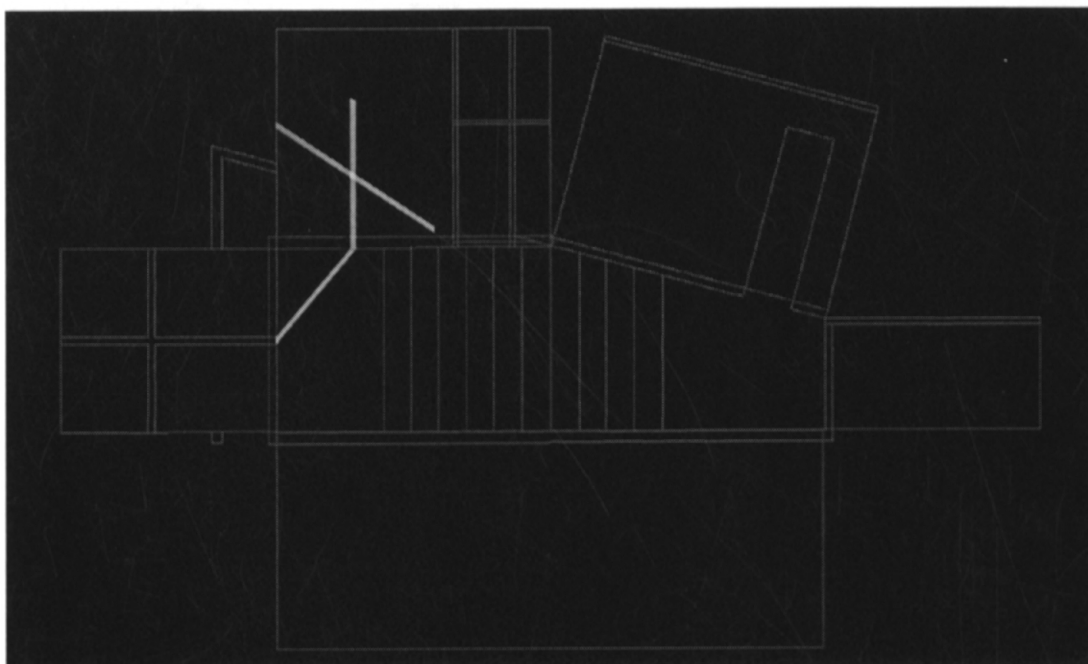
0300 PM



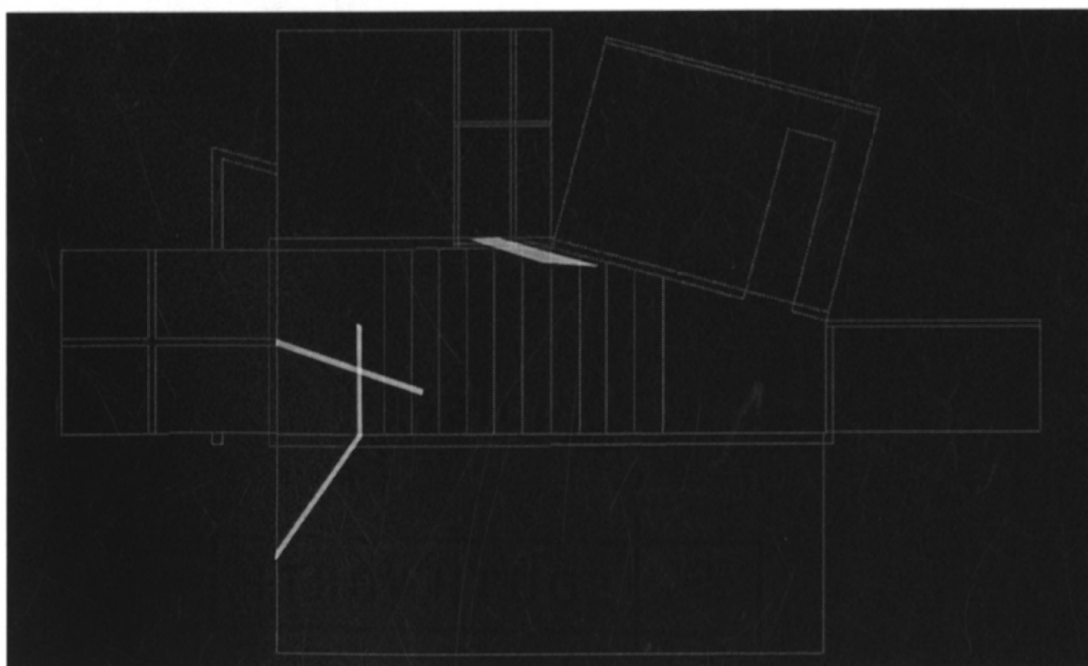
0600 PM

Following drawings depict successive transformation of the Chapel interior represented through Japanese mode of drawings – Oku-shiji. Drawings represent interception of image of cross of light by the wall and floor surfaces.

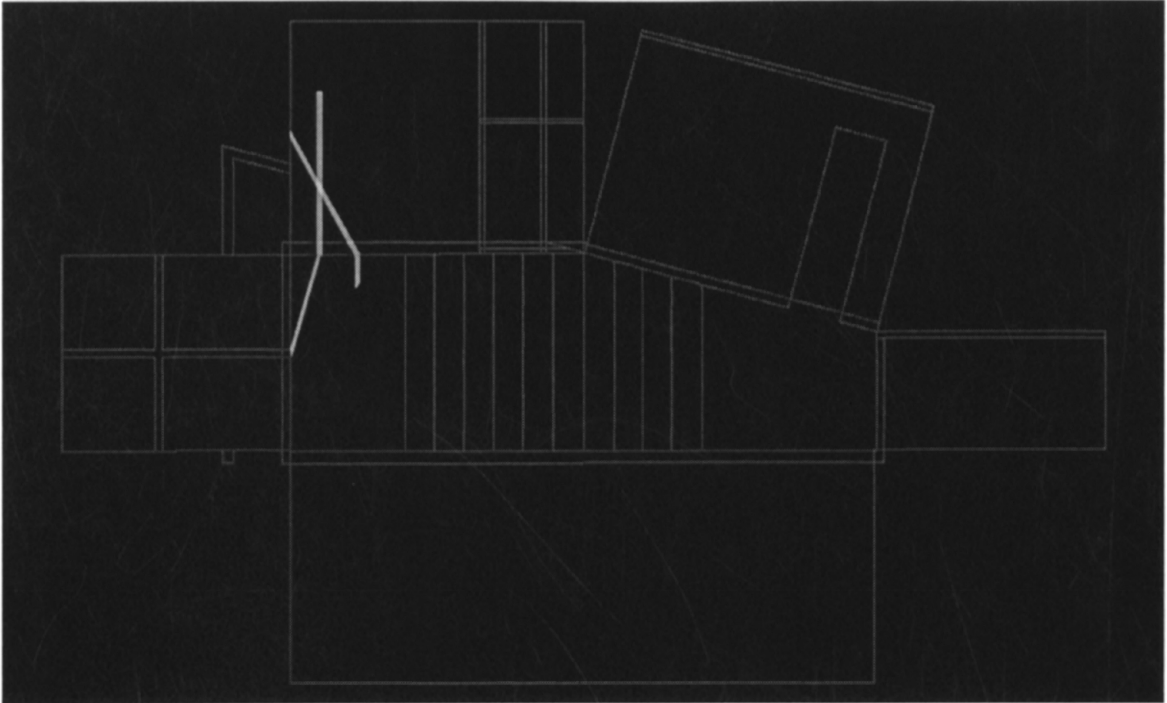
EQUINOX – 8 AM



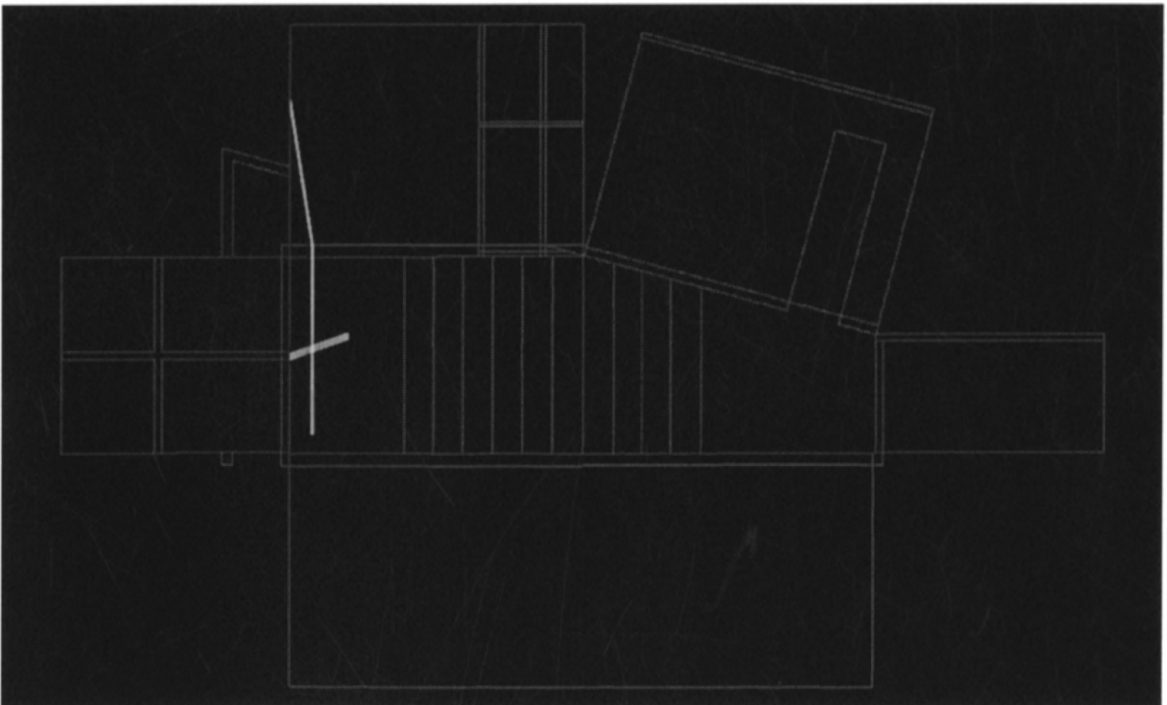
EQUINOX – 1150 AM



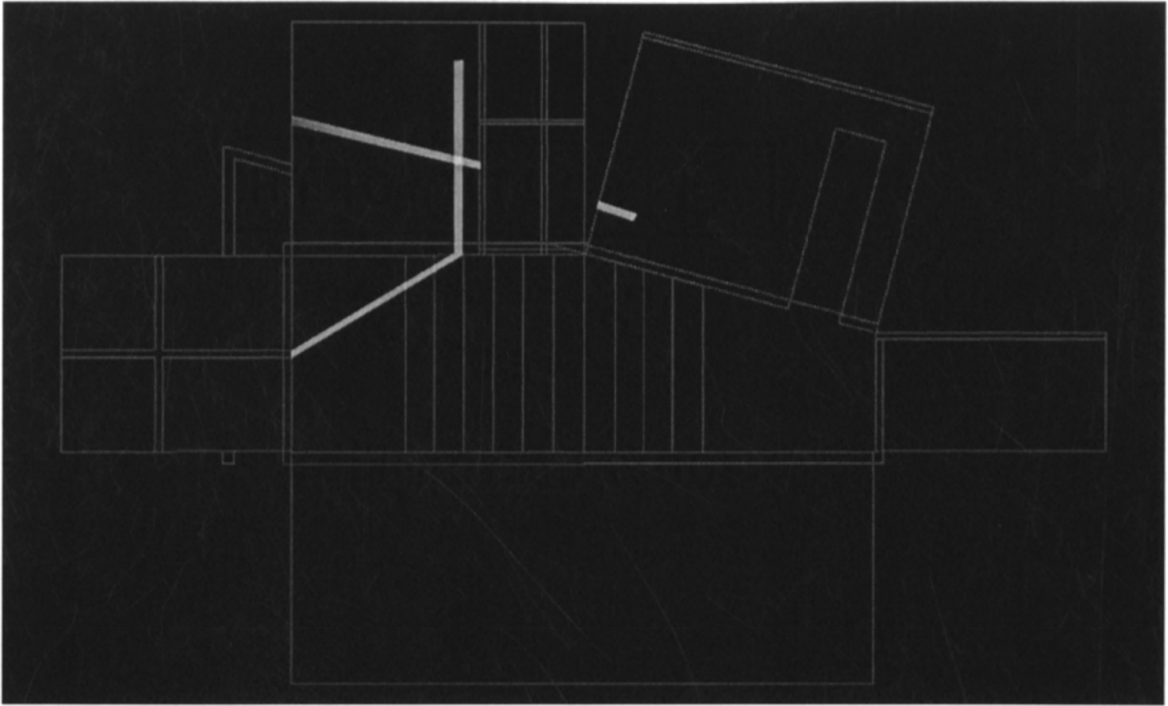
SUMMER 8AM



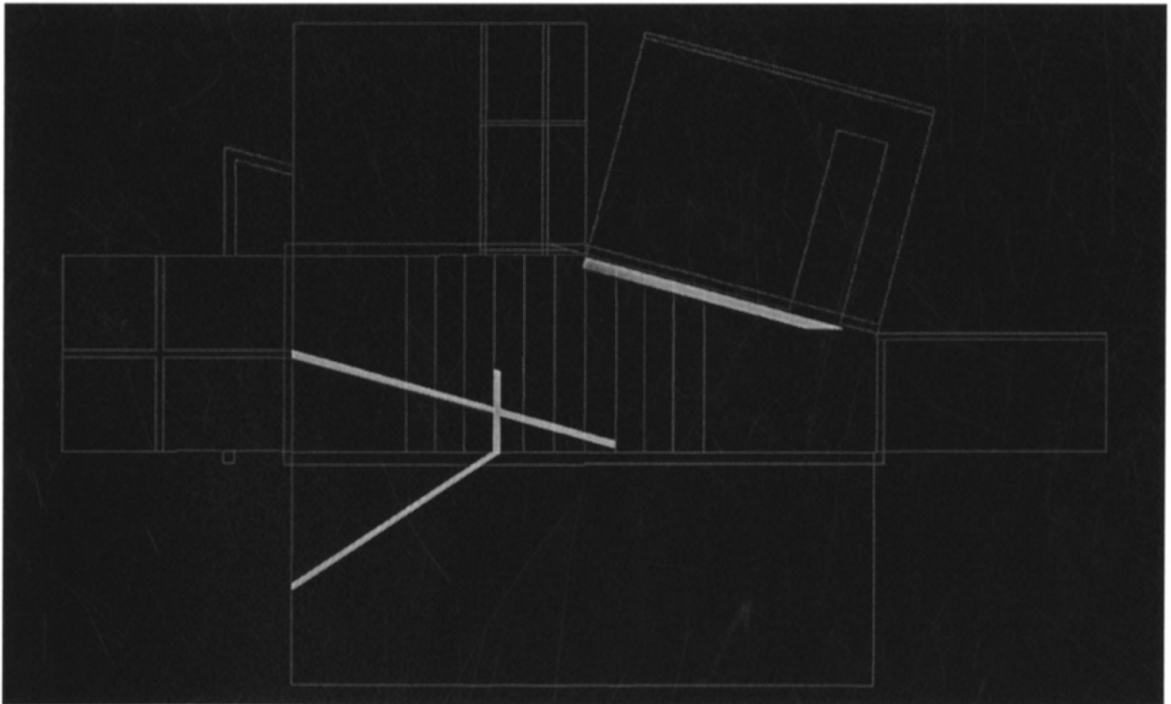
SUMMER 1130 AM



WINTER 8AM



WINTER 1130 AM



These drawings depict light intercepted by wall surfaces and floor of the church interior at different times in a day and different days in a year. It indicates perpetual transformation of space articulated by light and darkness in a temporal succession within a single volume of space. Floor and wall surfaces are continuously regenerated and reinvented through rays of light, which correspond with the movement of the sun, atmospheric conditions and several other natural phenomenon. Church interior is revealed in successive composition of two-dimensional planes, which become manifest through several time scales depicted through perpetual transformation of images of light intercepted by planar surfaces. Through these successive transformations of images, space is reinvented every moment. In a single space, events present as manifold existence of the place. Within the single volume of the main sanctuary of the chapel, space exists through perpetual regeneration and extinction of events in the form of light and shadow, aligning the space with the idea of a phenomena wedged into an order of absolute emptiness, which reveals itself momentarily in between two successive events.

Similar notion is communicated through the successive appearance of events in a movement space, when the observer experiences sequence of spaces, which are successively revealed as phenomena of light and darkness, articulated by the presence of emptiness, in the form of twilight. This Spatial configuration is centered on the idea of Shintai, perceived as the key element, which binds the successive appearance and disappearance of events within the order of absolute emptiness.

The idea behind manifesting space as dynamic occurrence of events remains the notion of transient state of being and the idea of emptiness (sunyata), deeply wedged in Japanese consciousness. Appearance of an event, which fades away in an instant, manifests the strong indication towards the idea of ephemeral existence and reveals the notion of eternal or the idea of absolute emptiness, which underlies the source of all phenomena. The yearning for the eternal, which is revealed through momentary perceptions of events, appears as the prime intention behind spatial composition rendered as a notion of phenomena wedged into absolute emptiness.

Next chapter presents an overall evaluation of Ando's aspirations and intentions behind the spatial and temporal conceptualization of church of the light manifested through an interaction of architecture and phenomena of light. The conclusive discussion includes significance of Ando's critical design approach in the greater context of contemporary problems and global society.

CONCLUSION

THE CULTURAL ESSENCE OF OKU AND SUNYATA

In Japanese culture, the notions of depth (oku) and emptiness (sunyata or MA) represent the two prime modes, which structure space-time conception.

Idea of light in traditional Japanese architecture is structured to evoke the similar notions of oku and sunyata, deeply assimilated in the cultural and historical segments of Japanese culture.

Perception of oku, which is revealed through a subjective experience of depth in the form of darkness, is a critical condition suggesting and inspiring Japanese aesthetics and sensibilities. Ando intends to evoke these similar conditions of Japanese sensibilities in his architecture through phenomena of light and darkness. In church of the light, two inter-related compositions – movement space and corresponding gradient of volume and darkness—are articulated through design elements of geometry, orientation, and materials, which intend to evoke the perception of getting deeper into the space, thereby generating the perception of subjective depth for the observer. Secondly, temporal arrangements of constant evolution of space (either singular volume of space or space perceived as two-dimensional perceptual planes) articulated by shades of monochromic gradation of light, which eventually point towards the convergence of space and light to the idea of zero, evoke the notion of depth in a temporal sequence. Hence, elements and intentions similar to the ones deeply embedded in Japanese culture are identified to have been manifested in church

of the light, nevertheless, integrated in a geometrical framework dictated by the contemporary vocabulary of universal language.

In addition, Japanese sensibility seeks pleasure and aesthetics in the idea of absolute emptiness (sunyata), suggesting the notion of eternal⁵⁷ embedded in dynamic occurrence of events, which fade in an instant. Traditional Japanese spatial composition intends to evoke the similar notion of emptiness, generated through dynamic manifestation of events, which are composed along the guidelines of successive observation and frontal composition. It is the yearning of eternity, which becomes the primal force behind rendering of space as momentary expression of events.

Observing the similar intentions of revealing the moment of eternal (sunyata) wedged in between the dynamic regeneration and extinction of events, in church of the light, Ando has applied the phenomena of light and darkness to similar logic, integrated through two design forces –successive observation and frontal composition. The spatial composition achieved by Ando informs us of the architectural intention being formation of a lived space, which maintains a dialogical relationship with the human element. Shintai, which is undergoing the experience of perceiving successive events, articulates the spatial composition delineated in monochromatic shades of light and dark, which is rendered fragmented by the successive insertions of MA in the form of twilight. In line with

⁵⁷ ⁵⁷ Ando observes, "The Japanese, moreover, have been inclined since ancient times to discover eternal character in that which fades and dies, feeling the eternal to be intuitable, contradictorily in what has only fleeting existence. A flower is an ideal metaphor for this, for it withers, scattering its petals, just when we find it to have attained its optimum beauty".

the design configurations of successive observation and frontal composition interweaved within the syntax of geometrical framework, orientation and materials, spatial experience becomes a dynamic perception of events, which is under continual transformation as phenomena of light and shadow. It can be observed that in Church of the Light, architecture appears to transcend its material identity and projects itself as a phenomenon wedged in absolute emptiness, which is evoked by the presence of twilight.

Within this context, architecture transforms into the idea of a theatrical stage in order to screen the notions behind the meaning of existence. It does not establish itself as an objectification or symbolism of the idea but a felt or subjective version of the idea, which is perceived and experienced by Shintai.

Ando intends to manifest and communicate these fundamental beliefs, which have nurtured and nourished Japanese culture since ancient times, through his architecture. Design elements, such as geometry, materials and orientation are synchronized in a certain way that they become pure instruments in manipulating and articulating light, which evokes the existential beliefs, deeply wedged into the consciousness of Japanese people. Ando's intentions in this context are observed in his following statement,

"I introduce nature – light, wind and water – within a geometric and ordered architecture, thereby awakening it to life. Climatic changes in turn transform the condition of architecture from moment to moment. Contrasting elements meet with startling results, and in these results, architectural expression is born that is capable of moving the human spirit and allows us to glimpse the eternal within the moment. The abode of the eternal is thus within he who perceives it." (Ando, 1995, P. 474)

INTEGRATION OF OCCIDENTAL AND ORIENTAL CONCEPTS OF LIGHT

Ando, while situating his architecture within the regional and cultural context of Japanese roots, aspires to build in a global context through an integration of Occidental and Oriental ideas of light in his architecture.

Occidental notions of light are based on symbolic representations of the ideas of center and path and in western spatial compositions, light is manifested as a significant element, which complements the centralized conception of space. In addition, light constitutes a symbolic meaning, which represents the idea of divinity in Christian spaces. In line with these observations, light can be said to assume the supreme status in occidental spatial conceptions.

In Church of the Light, at the surface level, the presence of light simulates western version of ideas of light in space. The blade of light piercing through the cruciform opening cutting off the thick darkness within the church interior suggests the prominent force in the church, which resembles western reference of light as the most dominant element defining spatial configuration. It is the presence of light emanating from the cruciform opening, which serves to define and declare the sacred character of the building. Nevertheless, absolute idea of space, which is a characteristic of Occidental spatial configuration, is missing in Church of the Light in terms of ambiguous interpretation resulting from horizontal axis of reference attributed to the cross of light, which eventually designates emptiness. In addition, seemingly western representation of light as the supreme force in the church interior betrays tonal reference to Japanese conceptions of monochromatic renderings of light. With reference to the analysis done through

computer generated drawings and schematic sketches, it is observed that underlying the obvious resemblance to western ideologies of light is the reference to the Japanese concepts of *Sunyata*, *MA* and *Oku*, which are deeply embedded into the consciousness of Japanese people.

However, at the same time, dominance of light cutting through the darkness and element of light, represented as the supreme force, delineating central axis (horizontally) of the chapel interior⁵⁸ are revealed as intimations of the characteristic of western notion of light. The building extends its axis simultaneously to western and oriental cultural dimensions and connects both the cultures together generating the prospects and new horizons for building in a global context while maintaining its ties with regional and cultural roots. Ando verbalizes his own intentions and striving to create an ideal space of light, which integrates the essence of the two cultures,

"I have lived as an architect to reach my own space of light, experiencing both the Japanese space that is uniquely characterized by shades and the Western space that is rational and solid. It has been a continuous struggle, without an absolute answer, in order to realize two characteristics that sometimes contradict each other, without denying one to accept the other."
(Ando, 2000, P. 139)

The fact that idea of the building originates from western reference, while it is to be situated in Japanese context suggests the critical decision-making behind the conception of the entire project. Nevertheless, Ando's effort in the critical process of designing the building referring simultaneously to the western

⁵⁸ It should be considered, however, that central axis is not delineated with respect to the entrance and it is aligned horizontal plane and not vertically.

faith and Japanese cultural bindings appears to be fulfilled by delicate balance of ideas conveyed by light and dark of the two distinctly opposite cultures.

BRIDGING THE GAP BETWEEN MODERNISM AND TRADITIONS

Integration with nature has been a characteristic of traditional architecture of Japanese residences through which not only a close relationship with the reality is maintained, but also through the introduction of seasonal changes and flux of the nature, the notion of temporariness and transience state of being is intended to generate within daily living spaces. Observing similar intentions, Ando attempts to regenerate the presence of nature in the form of light, which emerges as an indication of the integrated idea of nature in the face of speeding urbanism and fast growing population, which have rendered the presence of nature in the cities rather fragmented and ephemeral. Natural elements of light and darkness, which penetrate into the volume of the Church, infiltrate the ground realities of life in an environment plagued by virtual realities and visual pleasures of a consumer-oriented society. Through an integration of architecture and nature, in the form of light and darkness, presented in Church of the light, Ando attempts to insert a spiritual microcosm in the chaotic context of Japanese cities dictated by the principles of consumerism, standardization, and simulation.

Within this context, Ando not only attempts to assimilate notions of cultural elements –*Oku* and *sunyata* --through the phenomena of light and darkness but also, by generating a dialogical relationship between architectural spaces and nature, evokes the essence of Japanese culture, thus regenerating traditional

elements, which were lost in a pursuit of modernization. However, In order to evoke the essence of past traditions and cultural values, Ando did not attempt to quote traditional elements, thus eliminating nostalgic ethos, which has become a signature element of post modernism directed towards consumerist practices. On the contrary, Ando completely eliminates any insinuation of traditional vocabulary of the past, rendering his conception of spatial prototype remote from duplication of architecture of the past. His architecture is constructed within modern linguistics, which is rationally conceived with respect to the demands of contemporary life. Within the framework of Church of the Light, Ando has attempted to interweave the modern needs and the traditional values together. His approach is a rational solution to the paradox stated earlier, "How to be modern and return to sources."

Ando's genius reaches its height by conceiving and delivering cultural essence within a framework descending from modern linguistics rather than borrowing nostalgic elements from history. Creating a bridge between modernism and traditions, he attempts to offer a solution to the gap, generated by indiscreet adoption of modernist ways of life, which eventually developed into forces of standardization, consumerist practices and in Frampton's words, "subtle destruction of creative nucleus's of cultures."

NEW HORIZONS IN ANDO'S ARCHITECTURE

Evident in Church of the Light is that Ando's attempts inform of new horizons and prospects in designing and building, which simultaneously touches

the dimensions of modernism, traditional values and global aspirations. Deeply embedded into regional particularities, cultural elements and historical significance, Ando's architecture simultaneously extends into the future prospects of material limitations, technological advancements and demands of a new lifestyle. In order to outline Ando's assiduous and consistent effort in re-establishing the fundamental values of architecture into the environments of contemporary cities, submerged in the plight of consumerist practices, simulation and standardization, I would like to repeat his own incisive observation and intentions,

"I believe that, however anachronistic it may sound, it is important to ask the fundamental question, "What is architecture?" The creation of architecture must surely be a criticism of today's problems. It must resist existing conditions. And it is only when one squarely faces up to today's problems that one can really begin to deal with architecture." (Ando, 1995, P.450)

Within this context, Ando's approach in the field of architecture becomes a long investigation⁵⁹ for creating an ideal space, which, while presenting the criticism of contemporary problems, remains firmly rooted in its own culture and while constructing in a global context, remains critically aware of the human and spiritual aspirations of an individual and an integrated society.

⁵⁹ Ando explains the spiritual intentions in his spaces, "I wish to create prototypes because I wish to make my work into a long investigation, which is continuously developing. This attempt justifies the life of someone who builds buildings. My approach to the person who will be using these spaces amounts to that of an intermediary in an in-depth dialogue between the user and the architecture; my spaces transcend theory and appeal to the deepest spiritual levels. In other words, my spaces relate to fundamental aspects of humanity.

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